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TECHNICAL TRANSLATIONS

Volume 10, Number 3 | Pages 251 - 361 | August 15, 1963

*Descriptors marked with an asterisk are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 195 (GENERAL SERIES). 5 June 63, 14p. JPRS: 19577.
Order from OTS $0.50 63-21992

Consists of abstracts from selected scientific and technical journals of East Germany and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Magnetism, Mechanical engineering, Magnetohydrodynamics, Tracer studies, Ores, *Solid state physics, *Spectroscopy, *Biochemistry, *Physiology, *Pathology, *Anatomy, Mathematics, Transportation, Ultrasonic radiation, Automation, Mechanics, Birds, Insects.

SCIENTIFIC SESSIONS, CONFERENCES AND MEETINGS IN THE USSR 1946-53: BIBLIOGRAPHIC INDEX, tr. by Walter L. Burton. Jan 63 [20]p. ACIC TC-563.
Order from OTS or SLA $1.60 63-15721

Trans. of mono. Nauchnye S"ezdy, Konferentsii i Soveshchaniya v SSSR 1946-53: Bibliograficheskii Ukazatel', Moscow, 1958.

DESCRIPTORS: *Conferences, *Indexes, *Mathematics, *Astronomy, *Geodesics, *Geophysics, *Meteorology, *Hydrology, Geology, Bibliographies.

AGRICULTURE

Detroux, L.
DISINFESTING SOIL AND TRANSMISSION OF A DISAGREEABLE FLAVOR TO POTATO CROPS. [1963] [4]p.
Order from SLA $1.10 63-14110

Trans. of Parasitica (Belgium) 1952, v. 8, no. 1, p. 40-43.

DESCRIPTORS: Decontamination, *Soils, *Taste, *Potatoes, *Insecticides, Parathion.

It is shown that the products based on Lindane (gamma-isomer of BHC) of German origin, products based on aldrin, toxaphene and parathion do not transmit a disagreeable flavor to tubers gathered from potatoes planted in soil treated and sprayed with these products. On the other hand, although the flavor is not altered as pronouncedly as when using technical BHC, the use of products based on chlordane, dieldrin, or Lindane of origin other than that mentioned above, or based on purified BHC no longer giving the characteristic "moldy" odor should be cautiously avoided. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 66. 15 May 63, 42p. JPRS: 19193.
Order from OTS $1.25 63-21814

Trans. (some excerpts) of Traktory i Sel'khozmashiny (USSR) 1963 [v. 33] no. 3, p. 1-2, 34-35, 48-49; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 1, p. 64-69; Nauchno-Tekhnicheskii Obshchestva SSSR, 1963 [v. 5, no. 2] p. 7-8; and 10 selected articles from Jan-Mar 63 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Trailers, Earth moving equipment, Automation, Industrial plants, Construction, Sabotage.

Contents:
New machines for kolkhozes and sovkhozes, by S. Betin
Dump trailer production at the Dzhankoi machine building plant
The Kirov plant expansion and reconstruction trust
Activities of tractor and agricultural machine design organizations, by K. S. Vydrin
PDT-1.5 universal loader;peat digger, by A. T. Karpov
PZG-3 paste feed mixer, by V. A. Pugachev
ZhRS-4.9 windrower, by D. V. Kochenenko
Exhibition of NII and KB of Goskomitet on automation and machine building work, by B. K. Kharitonov
Who sabotages production of agricultural machinery
Priokskaya pravda on potato-harvesting combine
Example of Kubantsy should be followed, by I. Kostenko
Reject materials go into production, by I. Kostenko
Kirov tractor plant: crash construction program, by B. Marinin
Four-bottom tractor-mounted plow RN-4-35, by M. Z. Tzimmerman
Flax harvesting combine LK-4M, by V. A. Oryshaka
ZhVN-10 tractor-mounted windrower, by V. L. Pashkin
Information on Rostov Rostsel' mash plant
Experiments in Lugansk
New Rostsel'mash stacker-loader
P. Sebekin, head of building administration no. 22, trust no. 5.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 68. 28 May 63, 14p. JPRS: 19461.
Order from OTS $0.50 63-21941

Trans. of Traktory i Sel' Khozmashiny (USSR) 1963 [v. 33] no. 4, inside front cover, p. 1-3, inside back cover; Sel'skii Mekhanizator (USSR) 1963, no. 4, p. 3, 11, back cover.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Earth moving equipment, Industrial plants.

Contents:
Technical progress in tractor building, by B. G. Sivak
T-50VM vineyard tractor
Various bush-bog plows produced by the Odessa plant
Unified parts used on tractors, by M. Starikov
Speedy production of the SK-4 combine
Answers to questions about the T-40 tractor.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 69. 4 June 63, 38p. JPRS: 19555.
Order from OTS $1.25 63-21978

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 11[84] 16 Mar, p. 10-12, 15-16.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, *Maintenance, Economics, Metals, Rubber.

Contents:
Spare parts for field and farm machinery
Low production of spare parts
Soviet spare parts production
Rural machine operators complain about shortage of spare parts
Degree of unfillment of the plan for spare parts production
Why is there a shortage of spare parts
An increase of the spare parts production plan
Towards an economy of metal in the production of spare parts
Spare parts; a great national economic problem
Increased production of spare parts
Shortage of sealing rings
Criticism of the production and supply of spare parts, by V. Krivosheev
The cheboksar tractor spare parts plant
Shortage of nipple rubber for milking installations
Conclusions of the action club concerning an improvement in the supply of spare parts.

Animal Husbandry

"VITAMIN-ENRICHED FODDER COMPOUND." [1963] [4]p.
Order from OTS or SLA $1.10 63-14357

Trans. of Danish patent 57,551, cl. 53g - 4.04, patented 3 Dec 38, granted 15 Apr 40, pub. 29 Apr 40. by Hans Christian Clausen Kirel, Mfr.

DESCRIPTORS: *Vitamin A, *Vitamin D, *Food, Animals, Birds, *Oils, *Fats,

The invention relates to a vitamin-enriched fodder compound, particularly for poultry, consisting of a porous base impregnated with vitamin-bearing oils; characterized in that the porous base is granulated or ground, and each grain or particle is coated with a hardened fat or mixture of fats. (Author)

Barabanshchikov, N. and Smirnova, G.
MILK PRODUCTION AND INITIAL PROCESSING TECHNOLOGICAL PROPERTIES OF MILK PRODUCED BY THE JERSEY AND BLACK-SPOTTED BREEDS (Tekhnologicheskie Svoistva Moloka Korov Chernopestroi i Dzherseiskoi Porod) tr. by V. A. Solodukhin. [1962] [7]p. (foreign text included). [CSIRO] Trans. no. 5976.
Order from OTS or SLA $1.10 62-33410

Trans. of Molochnaya Promyshlennost' (USSR) 1962 [v. 23] no. 4, p. 36-37.

DESCRIPTORS: *Milk, Production, *Cattle, Processing, Genetics, Cheese, Milk fat.

Experimental data show that milk produced by cows of the Jersey breed may be successfully used for the manufacturing of fine hard cheese; the technological process is quicker, the amount of raw material is less, the quality is better as compared with cheese manufactured from milk yielded by cows of the Black-spotted breed. (Author)

Cewers, Albert.
PROCEDURE FOR PREPARATION OF A VITAMIN-RICH PRODUCT FOR ANIMAL FATTENING AND FEEDING. [1963] 3p.
Available on loan from SLA 63-14356

Trans. of Danich patent 38,435 [3 Feb 28].
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-14846 [1960] 4p.

DESCRIPTORS: Preparation, *Vitamins, *Food, *Animals, Bovines, Swine, Fats, Nutrition.

Kovalenko, Ya. R.
AFRICAN SWINE FEVER (Afrikanskaya Chuma Svinei). 30 Jan 63, 19p. 26 refs. Trans. V-1817.
Order from OTS or SLA $1.60 63-15730

Trans. of Veterinariya (USSR) 1962, v. 39, no. 11, p. 75-79.

DESCRIPTORS: *Virus diseases, Animals, *Swine, Veterinary medicine, *Disease vectors, Immunity, Control, Decontamination, Communicable diseases.

Polykevskii, M. D., and Lyaushkin, A. V.
SEARCH FOR METHODS OF SPECIFIC PROPHYLAXIS FOR BOTULISM OF CATTLE AND SHEEP (Izyskanie Metodev Spetsificheskoi Profilaktiki Botulizma Krupnogo Regatogo Skota i Ovets). 15 Nov 62, 19p. Trans. V-1805.
Order from OTS or SLA $1.60 63-13412

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 399-410.

DESCRIPTORS: *Botulism, Bacterial vaccines, *Cattle, *Sheep, *Immunity, Toxicity, Veterinary medicine.

Investigated museum strains of botulinus Type C, no. 185 proved to be non-toxic. Even intact cultures did not provoke disease in small laboratory animals. The museum strain of the botulinus bacillus Type C no. 91 which is non-toxic or slightly toxic does not possess immunogenic properties. The strain of botulines bacillus Type C_{beta} possesses pronounced toxigenic properties. The toxigenicity of the cultures of this botulinus strain, grown on meat, peptone, liver broth with an additive of gelatin, increased 10 times the toxigenicity of the same culture grown on conventional MPLB. The strain of botulinus baccillus Type C_{beta} possesses pronounced immunogenic properties. Precipitated formol-vaccine prepared from the cultures of this strain on MPLB with an additive of gelatin protected guinea pigs and white mice which had been vaccinated twice, as well as those vaccinated once against artificial inoculation with minimal lethal doses (100 MLD) of the given microorganism. Prepared precipitated formol-vaccine proved highly effective for sheep under laboratory conditions. After a one-time or two-time introduction of the vaccine, sheep acquired a stable immunity against artificial inoculation with lethal doses of the cultures of botulinus bacillus Type C_{beta}. (Author)

Ratner, L. S., and Sergeev, V. A.
NEW BIOLOGICAL METHODS FOR IDENTIFICATION OF THE VIRUS TYPES OF THE FOOT-AND-MOUTH DISEASE (Novye Biologicheskie Metody Identifikatsii Tipov Virusa Yashchura). 14 Nov 62, 15p. 3 refs. Trans. V-1798.
Order from OTS or SLA $1.60 63-13234

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 89-98.

DESCRIPTORS: Test methods, Identification, Titration, Viruses, Serum, Vaccines, *Foot-and-mouth disease, Virus vaccines, Veterinary medicine.

Two new biological methods are described of identification of the type of the (foot-and-mouth disease) (FMD) virus on week-old white mice. The first method is based on the utilization of type-specific sera, obtained by means of hyperimmunization of rabbits with the standard mice strains of the FMD virus O, A and C. In a parallel examination of 15 epizootic strains of the virus coincident results were obtained with the biological serological methods. The second method is based on the utilization of type-specific characteristics of the serum of the convalescent animals. We examined 76 sera, obtained from various agricultural animals on the 10th-100th day after their falling ill, by the cited method; among these the type of the FMD infection was established in 71 cases. (Author)

Smirnov, F. E., Grosheva, G. A., and Stolyarova, A. G.
ACTION OF THE LEAVES AND STEMS OF TRICHODESMA INCANUM ON CATTLE (Vliyanie Listev i Steblei Trikodesmi Sedoi no Organism Krupnogo Rogatogo Skota) tr. by A. Neal. [1962] [9]p. (foreign text included). [CSIRO] Trans. no. 5801.
Order from OTS or SLA $1.10 62-25636

Trans. of Uzbek[skaya Akademiya Sel'skokhozyaistvennykh Nauk] Nauch[no-Issledovatel'skii] Inst[itut] Vet[erinarii]. Sborn[ik] Nauch[nykh] Tr[udov] (USSR) 1959, v. 13, p. 195-198.

DESCRIPTORS: *Plants (Botany), *Cattle, *Alkaloids, *Poisoning, Pathology, Alkalosis.

Smirnov, F. E., Grosheva, G. A., and Stolyarova, A. G.
ROLE OF THE PLANT TRICHODESMA INCANUM IN THE ETIOLOGY OF "SUILJUK" DISEASE OF HORSES (Rol' Trikhodesmy Sedoi - Trichodesma Incanum - v Etiologii Suilyuka Loshadei) tr. by A. Neal. [1962] [30]p. (foreign text included). [CSIRO] Trans. no. 5603.
Order from OTS or SLA $2.60 62-25643

Trans. of Uzbek[skaya Akademiya Sel'skokhozyaistvennykh Nauk. Nauchno-Issledovatel' skii] Inst[itut] Vet[erinarii]. Sborn[ik] Nauch[nykh] Tr[udov] (USSR) 1959, v. 13, p. 173-185.

DESCRIPTORS: *Horses, Etiology, *Poisoning, Pathology, Alkalosis, Respiration, *Toxicity, Diagnosis, *Plants (Botany), *Alkaloids.

Smirnov, F. E. and Stolyarova, A. G.
PATHOGENESIS OF TRICHODESMA POISONING (SUILYUK) IN HORSES (K Voprosu Patogeneze Trikhodesmotksikova (Suilyuka) Loshadei) tr. by A. Neal. [1962] [21]p. (foreign text included). [CSIRO] Trans. no. 5802.
Order from OTS or SLA $2.60 62-25635

Trans. of Uzbek[skaya Akademiya Sel'skokhozyaistvennykh Nauk] Nauch[no-Issledovatel' skii] Inst[itut] Vet[erinarii]. Sborn[ik] Nauch[nykh] Tr[udov] (USSR) 1959, v. 13, p. 186-194.

DESCRIPTORS: Pathology, *Poisoning, *Toxicity, *Horses, Alkalosis, Respiration, *Plants (Botany), *Alkaloids.

Plant Cultivation

AGENTS SERVING TO COMBAT PLANT DISEASES. [1963] 2p.
Order from OTS or SLA $1.10 63-10976

Trans. of French patent 766,051, by I. G. Farbinindustrie.

DESCRIPTORS: *Plants (Botany), *Diseases, Protective treatments, Benzenes, Halogens.

An agent applied to the soil to combat plant diseases, consisting of aromatic compounds or their derivatives which contain one or several halogen or nitro groups or the two types of groups simultaneously, in admixture with fertilizers or inert substances, is described. (Author)

Dukshoorn, W. and Lampe, J. E. M.
A NITRATE DETERMINATION FOR SMALL SAMPLES OF PLANTS, SOIL, OR CULTURE SOLUTIONS (Een Nitraatbepaling voor Kleine Monsters Gewas, Grond of Voedingsoplossing). [1962] 5p.
Order from SLA $1.10 62-14088

Trans. of Inst[ituut voor] Biol[ogisch en] Scheik-[undig Onderzoek van Landbouwgewessen. Mededelingen] (Netherlands) 1960, no. 107/128, p. 139-141.

DESCRIPTORS: *Chemical analysis, Plants (Botany), *Soils, Culture media, Solutions, *Nitrates, Nitration, Chemical reactions.

Gerasimov, G. P.
HUMUS-CARBONATE SOILS OF THE SOCHI DISTRICT AND THEIR TRANSITION TO BROWN FOREST SOILS (Peregnoino-Karbonatnye Pochvy Sochinskogo Raiona i Perekhod Ikh v Burye Lesnye Pochvy). 1963, 10p. 10 refs. PL-480 Agr.
Order from OTS $0.50 63-11078

Trans. of [Akademiya Nauk SSSR]. Pochvennyi Institut. Trudy, 1949, v. 30, p. 253-261.

DESCRIPTORS: *Organic materials, Carbonates, *Soils, *Soil mechanics, Forestry, Humidity, Climatology.

Getov, L. V.
THE CHANGES IN THE WATER PERMEABILITY OF PEAT-BOG SOILS RESULTING FROM DRAINAGE (Izmenenie Vodopronitsaemosti Torfyano-Bolotnykh Pochv v Resul'tate Ikh Osusheniya). 1963, 13p. 5 refs. PL-480 Agr.
Order from OTS $0.50 63-11020

Trans. of [Belaruski Navukova-Dasledchy Instytut Meliyaratsyi i Vodnai Haspadarki]. Trudy (USSR) 1958, v. 8, p. 313-327.

DESCRIPTORS: *Soils, *Peat, *Swamps, *Porosity, *Drainage, Physical properties, Moisture, Permeability.

Hedrick, R. M. and Mowry, D. T.
IMPROVEMENT OF SOIL CONDITIONING AGENTS, IN SOILS STABILIZED THEREBY AND A PROCESS FOR SUCH CONDITIONING. [1963] 7p.
Order from OTS or SLA $1.10 63-14342

Trans. of Belgian patent 510, 282, issued 28 Mar 52, by Monsanto Chemical Co. (U.S. Priority 12 Feb 52, appl. 271, 280).

DESCRIPTORS: Soil mechanics, *Soils, Polymers, Hydrocarbons, Amines, Amides, Surface properties, *Plants, Growth, Carboxylic acids

The invention concerns a material for conditioning and improving soil, characterized by the fact that it comprises a water-soluble polymerized polyelectrolyte of molecular weight at least 10,000 having a substantially linear, continuous carbon chain obtained by polymerization of an unsaturated alifatic group, these polyelectrolytes not including polymers of acrylic, methacrylic acids or their derivatives, nor the copolymers of maleic acid derivatives. The polyelectrolyte is selected from copolymers of unsaturated polycarboxylic acids (except maleic) and at least one other monomer from the class of polymers of sulfonated hydrocarbons, polymers of unsaturated amines or polymers of unsaturated amides. (Author)

Hedrick, R. M. and Mowry, D. T.
IMPROVEMENTS IN SOIL CONDITIONING AGENTS AND A PROCESS FOR THEIR PREPARATION. [1963] 6p.
Order from OTS or SLA $1.10 63-14343

Trans. of Belgian patent 510, 283, 28 Mar 52, by Monsanto Chemical Co. (U. S. priority filed 2 Jan 52 under serial 264, 637).

DESCRIPTORS: *Soils, Additives, Polymers, Vinyl radicals, *Acetates, *Maleic acid, Esters, *Calcium compounds, Carbonates, Oxides, Hydroxides.

The invention has as its object the improvement of cultivable lands by development of an optimum physical structure. It relates to novel chemical compositions which exert unusual influences on soil fertility, improve the vitality of bloom, aid in utilization of plant nutrients and facilitate soil culture. (Author)

Ivanova, E. N.
PRINCIPLES OF SOIL SYSTEMATICS IN THE USSR (Printsipy Sistematiki Pochv v SSSR). 1963, 13p. PL-480 Agr.
Order from OTS $0.50 63-11081

Trans. of Zeszyty Problemowe Postepow Nauk Rolniczych (Poland) 1959, no. 16, p. 139-152.

DESCRIPTORS: *Soils, *Soil mechanics, Classification

Ivitskii, A. I.
INVESTIGATION OF SWAMP-DRAINING NORMS (Issledovanie Norm Osusheniya Bolot). 1963, 19p. 20 refs. PL-480 Agr.
Order from OTS $0.50 63-11018

Trans. of [Belaruski Navukova-Dasledchy Instytut Meliyaratsyi i Vodnai Haspadarki]. Trudy (USSR) 1958, v. 8, p. 35-54.

DESCRIPTORS: *Swamps, *Drainage, Water, *Agriculture, Tests.

Jung, J.
AN ORGANIC NITROGEN COMPOUND WITH LONG LASTING FERTILIZING ACTION (Über eine Organische Stickstoffverbindung mit Langanhaltender Düngewirkung). [1962] [3]p.
Order from SLA $1.10 63-10527

Trans. from Allgemeine Forstzeitschrift (West Germany) 1961 [v. 16] no. 31.

DESCRIPTORS: *Nitrogen compounds, *Fertilizers, Organic compounds, Urea, Nitrogen, Chemical properties, Grasses, Trees.

Jung, J.
FLORANID: A NITROGEN FERTILIZER WITH LONG LASTING ACTION (Floranid: ein Stickstoffdünger mit Langanhaltender Wirkung). [1962] [5]p. (foreign text included).
Order from SLA $1.10 63-10500

Trans. from Süddeutscher Erwerbsgärtner (West Germany) 1961, v. 15, no. 10.

DESCRIPTORS: *Nitrogen compounds, *Fertilizers, Urea, Organic compounds, Solubility, Absorption, Aldehydes, Chemical properties, Cereals, Soils, Growth.

Jung, J.
SLOW ACTING NITROGEN COMPOUNDS, ESPECIALLY CROTONYLIDENE UREA. [1962] [8]p. 10 refs.
Order from SLA $1.10 63-10519

Trans. of Z[eitschrift] für Pflanzenernähr[ung] Düngung, Bodenkunde (West Germany) 1961, v. 94, no. 1, p. 39-47.

DESCRIPTORS: *Nitrogen compounds, *Urea, Formaldehyde, *Fertilizers, Plants (Botany), Absorption (Biological).

Besides the usual mineral nitrogen fertilizers which are available to the plants immediately or shortly after introduction into the soil, it has been attempted for a long time to find synthetic substances which release nitrogen slowly, that is in sliding rates that depend on mineralization. Experiments carried out until now with condensation products of urea and formaldehyde (ureaform) show that in spite of the possible variations during the production of such products, the desired properties are not achieved in a satisfactory manner. CD urea represents a new substance which shows, with high total utilization, a slow and lasting nitrogen effect. As compared with the usual nitrogen fertilizers, CD urea is, during large additions of water, washed out with great difficulty and demonstrates also high plant tolerance. (Author)

Jung, J.
TESTING DIFFERENT MIXTURES OF CROTONYLIDENE-DIUREA (CD-UREA) WITH FAST ACTING NITROGEN COMPOUNDS. [1962] 9p.
Order from SLA $1.10 63-10383

Trans. of Landwirtschaftliche Forschung (West Germany) 1961, v. 14, no. 4, p. 246-254.

DESCRIPTORS: *Nitrogen compounds, *Fertilizers, Urea, Soils, Absorption, Cereals.

Makovskii, M. V.
STUDY OF FIELD MOISTURE CAPACITY OF PEAT SOILS OF THE BSSR WHEN IRRIGATED BY SPRINKLING (issledovanie Polevoi Vlagoemkosti Torfyanykh Pochv BSSR pri Oroshenni Ikh Dozhdevaniem). 1963, 13p. 7 refs. PL-480 Agr.
Order from OTS $0.50 63-11019

Trans. of [Belaruski Navukova-Dasledchy Instytut Meliyaratsyi i Vodnai Haspadarki]. Trudy (USSR) 1958, v. 8, p. 142-154.

DESCRIPTORS: *Soils, *Peat, *Moisture, Potential theory, Irrigation systems, Sprinklers, Measurement, Tests.

Nogina, N. A.
CONCERNING THE STRAW-YELLOW-PODZOLIC SOILS OF BELO-RUSSIA (O Palevo-Podzolistykh Pochvakh Belorussii). 1963, 16p. 7 refs. PL-480 Agr.
Order from OTS $0.50 63-11082

Trans. of Pochvovedenie (USSR) 1952, no. 2, p. 132-144.

DESCRIPTORS: *Soils, *Soil mechanics, Physical properties, Chemical properties.

Pervovskii, A. N. and Korzhuev, A. S.
METHOD OF TREATING SOILS. [1963] 1p.
Order from ATS $1.85 ATS-72Q69R

Trans. of Soviet patent 107,658, filed 30 July 56, under no. 555,421 with the Committee on Matters of inventions and Discoveries of the Council of Ministers, main certificate of authorship 100,527, in the names of G. V. Bogomolov, A. S. Korzhuev, and M. M. Kudryavtsev, 18 Nov 43.

DESCRIPTORS: Soils, *Soil mechanics

Polyakov, A. F.
MUD-TORRENT PHENOMENA IN THE CARPATHIANS, AND CAUSES OF THEIR INTENSIFICATION (O Prichinakh Intensifikatsii Selevykh Yavlenii v Karpatakh). 1963, 5p. 7 refs. PL-480 Agr.
Order from OTS $0.50 63-11022

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 8, p. 27-29.

DESCRIPTORS: *Erosions, Mountains, Forestry, Control, *Soils, Moisture.

Ringwald, E. L. and Mowry, D. T.
PROCESS FOR HYDROLYZING POLYMERIZED MONOMERS, HYDROLYZED POLYMERS AND SOIL CONDITIONING AGENTS COMPRISING THE AFOREMENTIONED POLYMERS. [1963] 5p.
Available on loan from SLA 63-14345

Trans. of Belgian patent 510,284, 28 Mar 52 to Monsanto Chemical Co. (U. S. Priority 29 Mar 51, appl. 218,293, 23 Nov 51, 257,967).

DESCRIPTORS: Polymers, *Acrylic acids, *Acrylonitriles, Hydrolysis, Solubility, Alkali metal compounds, Hydroxides, Methanols, Propanols, *Soils, Additives.

The present invention relates to a novel process for the preparation of water soluble polymers of acrylic acid. It relates in particular to a process of hydrolysis for converting polymers of acrylonitrile and methacrylonitrile into water-soluble polymers. (Author)

Shardakov, V. S.
PRINCIPLES FOR DETERMINING THE DATES FOR IRRIGATION OF COTTON FROM THE AMOUNT OF ABSORPTIVE POWER OF THE LEAVES. [1962] [30]p. 64 refs.
Order from OTS or SLA $2.60 62-10905

Trans. of mono. Voprosy Fiziologii Khlopchatnika i Trav (Problems of the Physiology of Cotton and Grasses) v. 1, Tashkent, 1957, p. 5-32.

DESCRIPTORS: *Water supplies, *Irrigation systems, Plants (Botany), *Cotton, *Absorption (Biological), Agriculture, Measurement.

Shkol'nik, M. Y., and Kositsyn, A. V.
EFFECT OF BORON ON THE RATE OF P^{32} INCORPORATION INTO NUCLEIC ACIDS OF SUNFLOWER (Vliyanie Bora na Skorost' Vklyucheniya P^{32} v Nukleinovye Kisloty Podsolnechnika) tr. by Lydia Venters. Oct 62, 5p. 7 refs.
Order from OTS or SLA $1.10 AEC-tr-5489

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 3, p. 662.

DESCRIPTORS: *Plants (Botany), *Boron, *Nucleic acids, *Phosphorus, Radioactive isotopes, Biochemistry.

Surmach, G. P.
STUDY OF PERMEABILITY AND RUNOFF ON DETRITAL CHESTNUT SOIL BY THE SPRINKLING METHOD (Izuchenie Vodopronitsaemosti i Stoka na Shchebnistykh Pochvakh po Metody Iskusstvennogo Dozhdevaniya). 1963, 11p. 6 refs. PL-480 Agr.
Order from OTS $0.50 63-11037

Trans. of Pochvovedenie (USSR) 1952, no. 10, p. 936-944.

DESCRIPTORS: *Soils, Porosity, *Drainage, *Erosions, Tests, Moisture, Permeability, Sprinklers.

The work deals with the study of the factors of water permeability and the conditions for the formation of runoff from the least investigated loamy detrital soils of the chestnut type under conditions resembling, as closely as possible, the natural ones, i.e., under sprinkling and in the presence of runoff. (Author)

Ternovskii, M. F. and Terent'eva, A. I.
PRELIMINARY VEGETATIVE GRAFTING IN INTERVARIETAL HYBRIDISATION OF TOBACCO AND MAHORKA (Predvaritel'noe Vegetativnoe Sblizhenie pri Mezhvidovoi Gibridizatsii Tabaka i Makhorki) tr. by W. Hall. [1962] [20]p. (foreign text included) 10 refs. [CSIRO Trans.] 6013.
Order from OTS or SLA $1.60 63-13603

Trans. of V[sesoyuznyi Nauchno-Issledovatel'skii] I[nstitut] T[abaka] i M[akhorki. Sbornik Nauchno-Issledovatel'skikh Rabot] (USSR) 1960, v. 151, p. 23-28.

DESCRIPTORS: Transplantation, *Tobacco, Genetics, *Plants (Botany), Compatibility, Immunity, Diseases.

Tribunskaya, A. Ya.
ADSORPTION OF NITROGEN AND PHOSPHORUS BY PINE SEEDLINGS ON GRAY FOREST SOILS (Vynosy Azota i Fosfora Seyantsami Sosny na Serykh Lesnykh Pochvakh). 1963, 6p. 5 refs. PL-480 Agr.
Order from OTS $0.50 63-11013

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 97, no. 5 [p. 927-930].

DESCRIPTORS: *Absorption, Nitrogen, Phosphorus, *Pine, Plants (Botany), *Soils, Forestry, Trees.

A study was made of the nitrogen and phosphorus content in pine seedlings grown under different regimes of nourishment and water supply during their first year of life. Some data were obtained also for the plants in their second year of life, both for sown nursery plants and for natural seedlings, which were cultivated under forest conditions. (Author)

Will, H.
FIRST EXPERIMENTAL RESULTS WITH FLORANID ON POTTED PLANTS. [1962] [4]p.
Order from SLA $1.10 63-10507

Trans. of Gartenwelt (West Germany) 1961, v. 61, no. 13, p. 258-260.

DESCRIPTORS: *Nitrogen compounds, *Fertilizers, Urea, Plants (Botany), Temperature, Moisture, Solubility, Dosage, Nitrogen, Calcium compounds, Ammonium compounds, Nitrates.

Zhilinskii, V. A.
PROCESSING OF EXPERIMENTAL DATA ON OBSERVATIONS OF WATER ABSORPTION BY SOIL (Obrabotka Opytnykh Materialov po Nablyudeniyam za Vpityvaniem Vody v Pochvogrunty). 1963, 12p.
PL-480 Agr.
Order from OTS $0.50 63-11016

Trans. of [Moskovskaya] Sel'skokhozyaistvennaya Akademiya. Izvestiya (USSR) 1956, no. 2(12) p. 131-140.

DESCRIPTORS: Mathematical analysis, Water, *Absorption, *Soils, *Soil mechanics.

The purpose of the article is to clarify throughly the phenomenon of water absorption by soil and to establish the indices required for the solution of practical problems of soil reclamation. (Author)

ASTRONOMY

Maksimov, L.
PLANET OF ENIGMAS. 11 Dec 62 [18]p.
FTD-TT-62-1775; AD-295 457.
Order from OTS or SLA $1.60 63-19205

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1962, 2 Nov.

DESCRIPTORS: Planets, *Mars, *Extraterrestrial topography, Deserts, Ice, Inland waterways, *Planetary atmospheres, Carbon dioxide, *Exobiology, Plants (Botany), Satellites.

A popularized account of some of the mysteries of Mars, including the nature of its surface features, the composition of its atmosphere, and the possibility of the existence of life thereupon.

Astrophysics

FORECASTING SOLAR FLARES: A REVIEW OF THE WORK OF A. B. SEVERNYI IN THE PERIOD APR 59-SEP 62 (SELECTED ABSTRACTS AND WRITER'S CONCLUSION). Preliminary rept. on AID Work Assignment no. 35. 28 Mar 63 [25]p. 32 refs. AID rept. P-63-43; AD-401 780.
Order from OTS or SLA $2.60 63-19214

DESCRIPTORS: *Abstracts, *Solar flares, Solar disturbances, Analysis.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 59, 1 May 63, 10p. JPRS: 19234.
Order from OTS $16.00/year 61-11147-59
Foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of new items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 60. 4 June 63, 27p. JPRS: 19544.
Order from OTS $16.00/year 61-11147-60
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, *Meteorology, *Oceanology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Barabashov, N. P., Ivanchenko, V. M., and Chirkova, R. M.
RADIO OBSERVATIONS OF THE PARTIAL SOLAR ECLIPSE ON FEBRUARY 15, 1961, AT A WAVELENGTH OF 1.5 m. (Radionablyudeniya Chastnogo Solnechnogo Zatmeniya 15 Feb 61 g. na Volne $\lambda \cong 1,5$ m) tr. by P. A. Kazakov. [1963] [6]p. (foreign text included). CSIRO Trans. no. 6182.
Order from OTS or SLA $1.10 63-19142

Trans. of Kharkov U. Astronomicheskaya Observatoriya. Tsirkulyar (USSR) 1961, no. 24, p. 36-38.

DESCRIPTORS: *Radio astronomy, *Solar eclipses, Extraterrestrial radio waves, Measurement.

Bolyunova, A. D. and Morozov, V. M.
ON PHOTOELECTRIC MEASUREMENTS OF THE NIGHTGLOW OF THE SKY (O Fotoelektricheskikh Izmereniyakh Nochnogo Neba). 21 Feb 63 [10]p. 4 refs. AID rept. T-63-25; AD-298 590.
Order from OTS or SLA $1.10 63-15918

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1959, no. 2, p. 321-325.

DESCRIPTORS: *Night sky, *Photometers, Calibration, Measurement, *Sky brightness, Line spectrum, Continuous spectrum.

Ezerskaya, V. A. and Ezerskii, V. I.
DISTRIBUTION OF BRIGHTNESS OVER THE DISK OF THE MOON. 1 May 63 [14]p. 15 refs. FTD-TT-62-1928.
Order from OTS or SLA $1.60 63-19650

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Komissiya po Fizike Planet. Izvestiya, 1961, v. 3, p. 68-73.

DESCRIPTORS: *Moon, Disks, *Brightness, Distribution, Photometers, Measurement.

Photometric investigation of the distribution of brightness over the disk of the Moon has shown that along the planetocentric meridians the brightness remains constant within the limit of error and along the equator the intensity of brightness increases continuously from the center of the disk to the limb. On the basis of these data a functional equation is found for the function expressing brightness: $B = f\left(\frac{\cos i}{\cos g}, a\right)$. (Author)

Kiepenheuer, K. O.
DENSIFICATION OF CORONAL MATTER. [1963] 13p. 7 refs.
Order from SLA $1.60 63-14653

Trans. of Zeitschrift für Astrophysik (West Germany) 1959, v. 48, p. 290-297.

DESCRIPTORS: *Solar corona, Solar flares, Density, Pressure, Cooling, Magnetic fields, Compressive properties.

Because of the very efficient radiative cooling, the gas pressure of coronal matter will not increase when compressed. Thus, an external pressure will bring coronal matter rapidly to the density and temperature of a prominence. Within a center of activity, the required pressure will be supplied from the colliding or forming magnetic fields, which, in addition, are needed to protect the cooled volume initially against the bombardment of coronal ions. The results obtained are applied to explain the formation of flare surges. (Author)

Kostko, Oleg.
IS A GRAVITY SCREEN POSSIBLE? 25 Apr 63 [6]p. FTD-TT-63-155.
Order from OTS or SLA $1.10 63-19655

Unedited rough draft trans. from Zarya Vostoka (USSR) 1963, 5 Jan, p. 4.

DESCRIPTORS: *Gravity, Gravimeters, Shielding, Theory, Solar eclipses, Astrophysics.

nontechnical discussion of possible observations of the screening of the sun's gravitational attraction by the moon during solar eclipses.

Mandel'shtam, S. L., Tindo, I. N. and others.
INVESTIGATION OF THE SUN'S X-RAY RADIATION. I. MEASUREMENTS WITH THE HELP OF GEOPHYSICAL ROCKETS (Issledovaniya Rentgenovskogo Izlucheniya Solntsa. I. Ismereniya pri Pomoshchi Geofizicheskikh Raket). 25 Feb 62, 16p. 20 refs.
Order from OTS or SLA $1.60 63-10908

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 10, p. 10-21.

DESCRIPTORS: *Sun, *X-rays, *Solar radiation, Fluxes, *Sounding rockets, *X-ray spectrum, Bremsstrahlung, Measurement, Scientific satellites, Solar spectrum.

Merman, G. A.
THE ALMOST-PERIODIC SOLUTIONS AND THE DIVERGENCE OF THE LINDSTEDT SERIES IN THE PLANE RESTRICTED THREE-BODY PROBLEM. CHAP. II. ALMOST-PERIODIC SOLUTIONS: LINDSTEDT AND BIRKHOFF SERIES. Jan 62 [105]p. 32 refs.
Order from OTS or SLA $14.00 63-14443

Trans. from [Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Trudy, 1961, v. 8].

DESCRIPTORS: *N-body problem, Celestial mechanics Orbital trajectories, Periodic variations, Fourier analysis, *Series, Functions.

Contents:
On the distribution of the symmetric periodic orbits of the elliptic and the hyperbolic types
The geometric theorem of Birkhoff on the existence of the second kind of period solutions
On periodic solutions of the second kind in the neighborhood of the periodic orbits of Schwartzschild
The existence of the almost-periodic solutions for the plane restricted three-body problem
The diversion of Lindstedt's and Birkhoff's series in the plane restricted three-body problem.
(See also 63-14442)

BEHAVIORAL SCIENCES

THE ALGORITHMIC STRUCTURE OF ACTIVE TOUCH. 5 June 63, 17p. 23 refs. JPRS: 19565.
Order from OTS $0.50 63-21985

Trans. of #Voprosy Psikhologii (USSR) 1963 [v. 9] no. 1, p. 67-79.

DESCRIPTORS: Sensory mechanisms, *Touch, *Perception, Psychology, *Cybernetics, *Algorithms, Information theory, Reasoning, Memory.

A discussion of the problem of regulating information flow by scanning from the point-of-view optimal selection of information for the solution of a following problem of perception.

Personnel and Training

DISSERTATIONS DEFENDED IN INSTITUTIONS OF THE ACADEMY OF SCIENCES USSR IN 1962. 29 May 63, 44p. JPRS: 19484.
Order from OTS $1.25 63-21952

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 4, p. 119-145.

DESCRIPTORS: *Scientific personnel, Personnel, Education, *Theses, Bibliographies, Science.

Elyutin, V.
THE 1963 LENIN PRIZES FOR SCIENCE AND TECHNOLOGY [AND] THE ACHIEVEMENTS OF THE 1963 LENIN PRIZE WINNERS. 23 May 63, 10p. 7 refs. JPRS: 19356.
Order from OTS $0.50 63-21896

Trans. from Izvestiya (USSR) 1963, 21 Apr, p. 1, 2.

DESCRIPTORS: Awards, *Scientific personnel, *Engineering personnel.

Golovinskii, G. P., ed.
SOVIET TECHNOLOGICAL CURRICULA, tr. by C. R. S. Manders. [1963] 391p.
Order from Pitman Publishing Corp., 2 West 45th St., New York £5 10s

Trans. of mono. Uchebnye Plany po Spetsial'nostyam Vysshikh Tekhnicheskikh i Sel'skokhozyaistvennykh Uchebnykh Zavedenii (Curricula of the Specialties of the Higher Technical and Agricultural Educational Establishments) Moscow, 1956.

DESCRIPTORS: *Education, Training, *Geology, *Mining engineering, Power, *Metallurgy, *Mechanical engineering, *Electrical engineering, *Electronics, *Chemical engineering, *Wood, Paper, Cellulose, *Food, *Civil engineering, *Geodesy, Mapping, *Hydrology, *Meteorology, *Agriculture, *Forestry, *Transportation, *Mathematics, *Physics, *Chemistry

Lebedev, P. D.
COMPUTERS FOR EDUCATION. 5 June 63, 12p. JPRS: 19564.
Order from OTS $0.50 63-21984

Trans. of Vestnik Vysshei Shkoly (USSR) 1963 [v. 21] no. 3, p. 13-18.

DESCRIPTORS: *Education, Training, *Teaching machines, Computers, Programming (Computers).

R., M.
DOCTORATES IN THE SCIENCES IN 1961-62. 29 May 63, 43p. JPRS: 19488.
Order from OTS $1.25 63-21956

Trans. of Jugoslovenski Pregled, 1963 [v. 7] Jan, p. 31-42.

DESCRIPTORS: *Scientific personnel, Personnel, Education, Theses, Bibliographies, Yugoslavia.

Sankovskii, E. A.
APPLICATION OF TEACHING MACHINES IN EDUCATION. 31 May 63, 5p. JPRS: 19506
Order from OTS $0.50 63-21964

Trans. of Vestnik Vysshei Shkoly (USSR) 1963 [v. 21] no. 3, p. 18-20.

DESCRIPTORS: *Education, *Training, Teaching machines, Programming (Computers), Computers.

Descriptions are given of three counselling and testing machines developed at the Minsk College of Radio Engineering.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 170 (BIOLOGY AND MEDICINE SERIES). 13 May 63, 19p. JPRS: 19167.
Order from OTS $0.75 63-21813

Consists of abstracts of articles from selected scientific and technical journals of Poland and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Poland, Rumania, Typhoid fever, Typhoid vaccine, Salmonella, Communicable diseases, Virus diseases, Virus vaccines.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 171 (BIOLOGY AND MEDICINE SERIES). 16 May 63, 10p. JPRS: 19208.
Order from OTS $0.50 63-21819

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Czechoslovakia, Drugs, Otorhinolaryngology, Allergy, Immunity, Industrial medicine.

ARTICLES IN THE FIELDS OF NEUROPATHOLOGY, PSYCHIATRY, PHYSIOLOGY, PATHOPHYSIOLOGY, AND MILITARY EPIDEMIOLOGY: LIST OF TITLES. [1963] 22p. Trans-6987.
Order from OTS or SLA $2.60 62-24758

Trans. from mono. Entsiklopedicheskii Meditsinskii Spravochnik Dlya Voennykh Fel'dsherov (Encyclopedic Medical Reference Handbook for Military Feldshers) Moscow, 1953.

DESCRIPTORS: *Subject indexing, Neurology, *Pathology, Psychiatry, Physiology, Military medicine, Epidemiology.

HERALD OF THE ACADEMY OF SCIENCES USSR: BIOLOGY SERIES, 1963 [VOL. 28] NO. 2: [SELECTED] TRANSLATIONS. 5 June 63, 92p. JPRS: 19571.
Order from OTS $2.25 63-21988

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 2, p. 167-179, 214-239.

DESCRIPTORS: *Biology, *Viruses, *Cancer, *Genetics, *Cells (Biology), Neoplasms, Laboratory animals, Space flight, *Rockets, High altitude, Space medicine, *Ear, *Reflexes, Muscles, Morphology, Histology, *Gravity, *Spleen, *Radiation effects, Microscopy, *Necrosis, *Space biology.

Contents:
On the role of viruses in the origin of cancer, by L. A. Zil'ber
The genetics of tumor cells, by Yu. M. Olenov
Some physiological reactions of animals during flights in the bio-cabins of ballistic rockets up to heights of 450-473 km, by I. I. Kas'yan
The remote effect of cosmic flight upon the vestibular-tonic and flexor reflex in the guinea pig, by Z. I. Apanasenko and M. A. Kuznetsova
Morphological and histochemical investigations of the labyrinth of animals, in the conditions of a changing gravitational field, by Ya. A. Vinnikov and others
Micronecrotic foci in the spleens of irradiated animals by V. A. Sondak and others.

ORDER CONCERNING THE COUNCIL FOR PLANNING AND COORDINATION OF MEDICAL SCIENCE AT THE MINISTRY OF PUBLIC HEALTH, 2 Nov 62. 16 May 63, 9p. JPRS: 19218.
Order from OTS $0.50 63-21829

Trans. of Gezetzblatt der Deutschen Demokratischen Republik (East Germany) 1962, pt. II, no. 96, p. 817-820.

DESCRIPTORS: *Research program administration, *Medicine, Public health, East Germany.

PROBLEMS OF BIOLOGY: SELECTED USSR STUDIES. 23 May 63, 31p. JPRS: 19357.
Order from OTS $1.00 63-21897

Trans. of Zhurnal Obshchei Biologii (USSR) 1962, v. 23, no. 5, p. 396-400; Nauchnye Doklady Vysshei Shkoly, Biologicheskie Nauki (USSR) 1963, no. 1, p. 7-11; #Biofizika (USSR) 1963, v. 8, no. 2, p. 145-146.

DESCRIPTORS: *Biology, Scientific research, Growth, Ecology, *Evolution, *Agriculture, *Behavior, Physiology, *Genetics, Drugs, *Medicine, Science, Plants (Botany), Food, Biochemistry, Biophysics.

Contents:
Development of general problems of biology in Russia, by I. E. Amlinskii
Measures for the further development of the science of biology, and the consolidation of its link with practical sciences
A new stage in the development of biological sciences

SCIENCE AND THE DEVELOPMENT OF AGRICULTURE AND MEDICINE. 29 May 63, 22p. JPRS: 19486.
Order from OTS $0.75 63-21954

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 4, p. 62-77.

DESCRIPTORS: Scientific research, *Agriculture, *Medicine, Biology.

Agol, I. I.
STEP-ALLELOMORPHISM IN DROSOPHILA MELANOGASTER (Stupenchatyi Allelomorfizm u Drosophila Melanogaster). 1962, 15p. 24 refs. PL-480 HEW.
Order from OTS $0.50 61-31005

Trans. of Zhurnal Eksperimental'noi Biologii i Meditsiny (USSR) [1927] v. 5, p. 86-101.

DESCRIPTORS: Genetics, *Chromosomes, *Genes, *Drosophilidae, Radiation effects, *Mutations, Morphology

Akimtsev, V. V.
SOILS AND DISEASES (CORRELATION BETWEEN THE DISEASES AND THE SOILS (Pochvy i Bolezni). 14 June 62 [15]p. 24 refs. NIH no. 6-23-62.
Order from OTS or SLA $1.60 62-32139

Trans. of Pochvovedenie (USSR) 1957, no. 7, p. 91-98.

DESCRIPTORS: *Soils, *Diseases, Geography, Minerals, Microorganisms, Vitamins, Chemical elements, Cancer, Distribution, Physical properties, Bacteria, Food, Parasites, Plants (Botany).

The experience of mutual work of the soil scientists and medical staff showed various correlations between diseases and the soils. The soil often is one of the most important outer causes of diseases or indirectly influences the latter. It is expedient to form a special branch of medical soil science including joint complex studies by soil scientists and medical staff, geochemists, biochemists and microbiologists. (Author)

Rapoport, I. A.
INTERACTION BETWEEN ETHYLENIMINE AND GENE PROTEINS, AND HEREDITARY CHANGES (Vzaimodeistvie Etilenimina s Gennyami Belkami i Nasledstvennye Izmeneniya). 20 Nov 62, 41p. 25 refs. Trans. A-1376.
Order from OTS or SLA $4.60 63-13233

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten' Otdel Biologicheskii (USSR) 1962 [v. 37] (67) no. 1, p. 96-114.

DESCRIPTORS: *Biochemical genetics, Chemical reactions, *Ethylenimine, *Proteins, Chromosomes, *Genes, *Mutations, Sex, Morphology, Insects, Carbonyl radicals, *Genetics, Phosphorus metabolism, Amines, Alkyl radicals.

Zenkevich, L. A., Barsanova, N. G., and Belyaev, G. M.
THE QUANTITATIVE DISTRIBUTION OF BOTTOM FAUNA IN THE ABYSS OF THE WORLD OCEAN (Kolichestvennoe Raspredelenie Donnoi Fauny v Abissali Mirovogo Okeana) tr. by David M. Damkaer. [1962] 8p. 12 refs.
Order from OTS or SLA $1.10 63-15150

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 130, no. 1, p. 183-186.
Another trans. is available from OTS $0.50 as 60-11649, JPRS-2675, 18 May 60, 7p.

DESCRIPTORS: Marine biology, *Benthos, Aquatic animals, *Oceans, Distribution, Oceanographic data.

Anatomy and Physiology

Ado, A. D. and Ginetsinskii, A. G.
ANAPHYLACTIC CONTRACTION OF SKELETAL MUSCLE (Anafilatkticheskaya Kontraktura Skeletnoi Myshtsy). Mar 63 [7]p. RTS-2219.
Order from OTS or SLA $1.10 63-15955

Trans. of Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1944, v. 18, no. 4/5, p. 64-67.

DESCRIPTORS: *Allergy, Physiology, *Muscles, Tongue, *Neuromuscular transmission, Acetylcholine, Nerves.

A study was made of the allergic reaction of a motor-denervated muscle, and using the classical Vulpian-Heidenhain preparation, the denervated dog tongue. It was concluded that acetylcholine liberated by cholinergic nerve endings establishes further conditions which stimulate a denervated muscle to contract anaphylactically.

Grupp, Günter.
RENAL BLOOD FLOW CONSIDERED PHYSIOLOGICALLY. [1962] 10p. (figs. omitted)
Order from SLA $1.10 63-10528

Trans. of [Zwanglose Abhandlungen aus dem Gebiet der Normalen und Pathologischen Anatomie] (West Germany) 1959, no. 5, p. 1-7.

DESCRIPTORS: *Kidneys, *Blood circulation, Physiology, Kidney function tests, Temperature, Blood.

Katono, Takahsaki.
COMPARATIVE NUTRITIOUS VALUE BASED ON THE TYPE OF PHOSPHORIC ACID. [1963] 6p. 4 refs.
Order from SLA $1.10 63-14572

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1932, v. 8, p. 515-518.

DESCRIPTORS: *Nutrition, *Phosphoric acids, Growth, Rats.

Biochemistry

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 66 (BIOCHEMISTRY SERIES). 28 May 63, 2p. JPRS: 19455.
Order from OTS $0.50 63-21936

Trans. of selected abstracts from Referativnyi Zhurnal. [Khimiya]. Biologicheskaya Khimiya (USSR) 1962, no. 17.

DESCRIPTORS: *Abstracts, *Biochemistry, *China, Radiobiology, Biophysics, *Nucleic acids, Ionization, *Radiation effects.

PROCESS FOR MANUFACTURE OF PROTECTED MICROCRYSTALLINE VITAMINS. [1963] 3p.
Available on loan from SLA 63-14336

Trans. of Argentine patent 123,307, granted 15 Sep 60 to Monterrey Inds. y Com. de Pasca SRL.

DESCRIPTORS: Manufacturing methods, *Microchemistry, *Crystals, *Vitamin A, Vitamins.

The invention involves a process for manufacture of protected microcrystalline vitamins by a preliminary heating step under conditions of constant mixing in which shark oil containing vitamin is raised to 60°C; a second step of adding to the oil finely ground wheat germ continuously until the desired homogeneity is reached; a third step of adding an antioxidant to the mixture; a fourth step of treating the mixture once it has reached about 80°C with molten microcrystalline wax, heating then continued until the temperature reaches 90°C; a fifth step of discharging the product on an ambient receiver by pouring it on a rapidly rotating, non-oxidizing steel disc in such a manner that it is discharged outward in the form of small particles, which when cool, are collected and constitute the protected microcrystalline vitamin. (Author)

SOVIET RESEARCH IN BLOOD TYPING. 31 May 63, 7p. 7 refs. JPRS: 19497.
Order from OTS $0.50 63-21962

Trans. of Sovetskaya Meditsina (USSR) 1940 [v. 4] no. 1, p. 48; Laboratornoe Delo (USSR) 1962 [v. 8] no. 9, p. 5-9.

DESCRIPTORS: *Blood, Classification, Blood serum, *Hematology, Fingers.

Contents:
Determining blood groups in dry sera, by P. V. Pechernikov
Simultaneous determination of groups and Rh factor in a drop of blood from the finger, by Z. F. Vasil'eva.

Cedrangolo, F.
THE d-AMINO ACIDS AND THE CORRESPONDING ENZYMES. [1963] 40p. 100 refs.
Order from SLA $3.60 63-14552

Trans. of Archivio di Scienze Biologiche (Italy) 1942, v. 28, no. 4, p. 317-340.

DESCRIPTORS: *Amino acids, Enzymes, Cancer, Molecular isomerism, Biochemistry, Oxidoreductases.

Topics include: d-amino acids (preparation of d-amino acids, determination of the configuration d, d-amino acids present in nature, d-amino acids of the malignant tumor); d-enzyme (the d-peptidases, d-amino acid oxidases, d-glutamic oxidases, d-glutamic aminoferases, d-arginases, d-hippuricases, carcinoma, a problem of enzymes); biological inversion of an animo acid into its isomer (d-amino acids ⟶ l-amino acids, l-amino acids ⟶ d-amino acids).

Dantsig, I. I. and Kantorovich, A. S.
A TURBIDIMETRIC MODIFICATION OF THE ESTIMATION OF FIBRINOGEN USING A PHOTOELECTRIC COLORIMETER. [1963] [6]p. 7 refs. FASEB manuscript no. S 211-2.
Order from OTS or SLA $1.10 63-19383

Trans. of Laboratornoe Delo (USSR) 1962, v. 8, no. 7, p. 22-24.

DESCRIPTORS: *Fibrinogen, *Blood proteins, Quantitative analysis, Photoelectric effect, *Colorimetric analysis, Diseases.

Gaisinskaya, O. M., L'Vova, V. V., and Uspenskaya, V. D.
ELECTROPHORETIC ANALYSIS OF DOG SERUM PROTEINS (Elektroforeticheskoe Izuchenie Belkov Syvorotki Krovi Sobaki). 1963, 15p. 13 refs. PL-480 Agr.
Order from OTS $0.50 63-11045

Trans. of Biokhimiya (USSR) 1954, v. 19, no. 3, p. 319-331.

DESCRIPTORS: *Electrophoresis, Analysis, *Blood proteins, *Serum albumin, *Globulins, Diet, Proteins.

The electrophoretic mobilities of 8 protein components of dog serum, of albumin, α_1-, α_2-, α_3-, α_4-, β_1-, β_2-, and γ-globulins were determined. The electrophoretic heterogeneity of α_3-, α_4-, and β_1-globulins was established and the mobilities of 6 new protein fractions systematically observed in the boundary areas of the mentioned 3 globulins were measured. The relative and absolute concentrations of albumin and of 3 groups of globulins (α, β and γ) in dogs kept for 2-3 months on a proteinless diet up to a state of severe protein deficiency were determined electrophoretically. It was shown that the hypoproteinemia induced by prolonged restriction of dietary protein may be accounted for by the marked decrease in blood albumin concentration with unchanged globulin concentration, i.e., the hypoproteinemia is actually a hypoalbuminemia. The restorative effect of parenteral preparations G-76 and S-24 with regard to serum albumin level was confirmed in severely hypoproteinemic dogs. (Author)

Hayashi, Akira.
ON THE EXISTENCE OF PHENOL-β-GLYCOSIDE BOND. Rept. 10 of Studies on the Chemical Combination between Lignin and Carbohydrate. May 62, 8p. 16 refs. FPRB Trans. no. 154
Order from NRCC NRCC C-4388

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1961, v. 35, p. 83-86.

DESCRIPTORS: *Lignin, *Carbohydrates, Chemical bonds, *Phenols, *Glucosides, *Xylose, Chromatographic analysis, Hydrolysis, Hydroxides, Glycoside hydrolases.

(See also NRCC C-4294)

Lang, K.
THE ENZYMIC DEGRADATION OF NATURAL AMINO ACIDS. [1963] 15p. 27 refs.
Order from SLA $1.60 63-14579

Trans. of Klinische Wochenschrift (Germany) 1943, v. 22, p. 529-532.

DESCRIPTORS: *Enzymes, Decomposition, *Amino acids, Oxidoreductases, Metabolism.

Smirnov, A. I.
CHANGES IN THE COMPOSITION OF THE TOBACCO LEAF DURING ITS DEVELOPMENT. [1962] 52p.
Order from K-H $65.00 K-H-3893-b

Trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii Institut Tabachnoi i Makhorkovoi Promyshlennosti. Trudy] (USSR) 1926, v. 29, p. 3-55.

DESCRIPTORS: Chemical analysis, *Tobacco, Plants (Botany), *Growth

Vanyushin, B. F.
THE CHEMICAL SYNTHESIS OF NUCLEIC ACIDS. 24 May 63, 12p. JPRS: 19405.
Order from OTS $0.50 63-21914

Trans. of Priroda (USSR) 1963 [v. 52] no. 4 p. 29-35.

DESCRIPTORS: *Synthesis (Chemistry), *Nucleic acids, Polymers, Phosphates, Cytochemistry.

Botany

Bazilevich, N. I. and Rodin, L. E.
PERCULARITIES OF THE REDUCED BIOLOGICAL CYCLE IN ZONES CHARACTERIZED BY VARIOUS SOILS AND FLORA (Osobennosti Malogo Biologicheskogo Krugovorota v Razlichnykh Pochvenno-Rastitel'nykh Zonakh). 1963, 6p. 15 refs. PL-480 Agr.
Order from OTS $0.50 63-11028

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 97, no. 6, p. 1061-1064.

DESCRIPTORS: *Rhythm (Biology), *Plants (Botany), *Soils, Ecology, Minerals.

It is shown that the interrelation between vegetation and soil, in the form of a reduced cycle of the ash and other elements, has significant differences within differing natural zones.

Korchagin, A. A.
THE TAXONOMY OF FOREST GROUPINGS (K Voprosu Printsipakh Klassifikatsii Lesnykh Gruppirovok). 1963, 18p. 27 refs. PL-480 Agr.
Order from OTS $0.50 63-11027

Trans. from Akademiya Nauk SSSR. Botanicheskii Institut. Sbornik Nauchnykh Rabot, 1945.

DESCRIPTORS: *Toxonomy, Forestry, Ecology, Genetics, Plants (Botany), *Trees.

A discussion of the possibilities applying phylogenetically classifications to forest ecosystems.

Krasnosselsky-Maximov, T. A.
ON METHODS OF DETERMINATION OF ASSIMILATION AND MOVEMENTS OF THE SLIT OPENINGS IN NATURAL CONDITIONS. [1962] 11p. 6 refs.
Order from SLA $1.60 63-10128

Trans. of Deutsche Botanische Gesellschaft. Berichte (Germany) 1929, v. 47, no. 5, Sonderabdruck [p. 313-320].

DESCRIPTORS: *Test equipment, Determination, *Carbonic acids, Optical equipment, *Photosynthesis, *Plants (Botany), Construction, Operation.

Paribok, T. A.
UPTAKE AND DISTRIBUTION OF BORON, MANGANESE AND MOLYBDENUM IN PLANTS, tr. by Lydia Venters. Sep 61 [26]p. 76 refs.
Order from OTS or SLA $2.60 AEC-tr-4818

Trans. of [Akademiya Nauk SSSR. Botanicheskii Institut. Trudy. Seriya] IV: Eksperimental'naya Botanika, 1958, no. 12, p. 268-[269].

DESCRIPTORS: Absorption, Distribution, *Boron, *Manganese, *Molybdenum, *Plants (Botany), Chemical analysis, Wheat, Flax, Growth, Fertilizers.

The content and distribution of boron, manganese and molybdenum in plants during their growth and development were investigated, using the representatives of dicotyledonous (flax) and monocotyledonous (wheat) plants as examples

Ramenskii, L. G.
ECOLOGICAL STUDY AND CLASSIFICATION OF PLANT GROUPS (Ob Ekologicheskom Izuchenii i Sistematizatsii Gruppirovok Rastitel'nosti) tr. by B. Ribush. [1962] [48]p. (foreign text included) 8 refs. [CSIRO] Trans. no. 5753.
Order from OTS or SLA $4.60 63-15260

Trans. of M[oskovskoe] Obshchestvo Isp[ytatelei] Prirody. Byulleten'. Otdel Biolog[icheskii] (USSR) 1953, v. 58, no. 1, p. 35-54.

DESCRIPTORS: *Ecology, *Taxonomy, *Plants (Botany), Morphology, Soils, Salts, Moisture, Distribution.

Tumanov, I. I. and Krasavtsev, O. A.
FROST RESISTANCE IN TREE SPECIES (Morozostoikost' Drevesnykh Rastenii). 1963, 16p. 21 refs. PL-480 Agr.
Order from OTS $0.50 63-11029

Trans. of Fiziologiya Rastenii (USSR) 1955, v. 2, no. 4, p. 320-333.

DESCRIPTORS: *Adaptation (Physiology), *Atmospheric temperature, Exposure, *Trees, Forestry, Growth.

Investigations are directed at the determination of the physiological variations enabling cells to withstand the severest frosts and the effect that external conditions exert on them.

Microbiology

Bukrinskaya, A. G., Ershov, F. I., and Zhdanov, V. M.
LUMINESCENT MICROSCOPY STUDY OF TISSUE CULTURE CELLS DURING THE INITIAL PHASE OF THEIR INTERACTION WITH SENDAI VIRUS. 24 May 63, 8p. 9 refs. JPRS: 19401.
Order from OTS $0.50 63-21910

Trans. of #Voprosy Virusologii (USSR) 1962 [v. 7] no. 1, p. 18-22.

DESCRIPTORS: Luminescence, *Microscopy, Tissues (Biology), Culture media, *Cells (Biology), *Viruses, Lipids, Phosphines, Nucleic acids, Biological stains.

An investigation was made of the changes in cellular lipids by means of phosphine 3R, for the elicitation of cellular lipids, with the exception of fatty acids, soaps, and cholesterol. The simultaneous change in cellular nucleic acids upon infection with the virus were determined by means of acridine orange which possesses marked affinity with nucleic acids, enters energetically into bonds with them and permits the elicitation of the nature of RNA and DNA distribution within the cell. (Author)

Dashkevich, I. O., D'yakov, S. I. and others.
METHOD OF PROCESSING BACTERIOLOGICAL PREPARATIONS WITH FLUORESCENT ANTIBODIES. 24 May 63, 9p. 5 refs. JPRS: 19404.
Order from OTS $0.50 63-21913

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 7, p. 101-107.

DESCRIPTORS: *Bacteria, *Antibodies, *Fluorescence, Microscopy, Biological stains, Diagnosis.

The work deals with preparation, fixation and staining of bacteriological preparations with fluorescent antibodies (direct and indirect methods). The authors' investigations have demonstrated that the temperature regimen and the duration of smear staining by means of fluorescent antibodies are important factors, conditioning the intensity and specificity of microbial cells fluorescence. The composition of the washing liquids and the methods of fixation of the preparations had no essential effect on the capacity of bacterial cells to be stained with specific fluorescent antibodies. (Author)

Grigor'eva, L. V.
DETECTION OF PHAGE AEROSOL BY ELECTROSTATIC PRECIPITATOR, BARBOTAGE TRAP AND SODIUM ALGINATE POWER (Indikatsiya Fagovogo Aerozolya Electropretsipitatorom, Barbotiruyushchim Ulovitelem i Prooshkom Alginata Natriya). 21 Mar 63, 9p. 11 refs. Trans. V-1820.
Order from OTS or SLA $1.10 63-15940

Trans. of #Voprosy Virusologii (USSR) 1963, v. 8, no. 1, p. 87-90.

DESCRIPTORS: *Viruses, *Bacteriophages, *Aerosols, Detection, *Electrostatic precipitators, Sodium compounds, *Alginates, *Culture media, Deptones.

Bacteriophage drop aerosols and can serve as a model for the testing of various interceptors. A. I. Vershigora's electroprecipitator is an effective apparatus, which helps estimating up to 99% of phage corpuscles from the drop aerosol. Semifluid agar and meat-peptone agar possess the maximum trapping capacity in respect to the phage aerosol in the electroprecipitator. Use of glycerin and of phosphate buffer, with pH 6.98, produced and lowest indicators. Barbotage trap permits detecting 95.2% of the phage aerosol and according to its trapping peculiarities is less effective than the electroprecipitator. Sodium alginate powder, when dissolved in water, reduces the activity of the bacteriophage and is of little use for detection of the phage aerosol. (Author)

Osipova, I. V.
EXPERIENCE OF USING FLUORESCENT ANTIBODIES FOR THE ACCELERATED DIAGNOSIS OF TYPHOID FEVER AND PARATYPHOIDS. 24 May 63, 9p. 6 refs. JPRS: 19402.
Order from OTS $0.50 63-21911

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 9, p. 77-82.

DESCRIPTORS: *Fluorescence, *Antibodies, Diagnosis, *Typhoid, Fevers, Salmonella, *Bacteria, Labeled substances.

The main investigations were carried out with artificially infected human blood and the blood of typhoid or paratyphoid patients. Rabbit salmonella monoreceptor sera and fluorescent antirabbit gamma-globulin conjugate (dimethylaminosulfochloride labeled) were used for investigations. The fluorescent antibody method for accelerated diagnosis of typhoid and parathphoid fevers could be regarded as a tentative one. The employment of the fluorescent antibody method accelerated the blood examination results by 12-24 hours.

Pronina, N. I.
DESCRIPTION OF CERTAIN NEW SPECIES AND VARIETIES OF CELLULOSE-DECOMPOSING MYXOBACTERIA. 24 May 63, 16p. 8 refs. JPRS: 19403.
Order from OTS $0.50 63-21912

Trans. of #Mikrobiologiya (USSR) [1962] v. 31, no. 3, p. 470-477.

DESCRIPTORS: Toxonomy, *Cellulose, Decomposition, *Myxobacteriales, Morphology, Bacteria.

A study of 10 pure strains showed that these are typical myxobacteria with the following characteristic properties: (1) Presence of a nucleus, poor stainability of protoplasm; (2) Negative Gram-staining; (3) Mode of locomotion peculiar of myxobacteria through body convolution, and movement of colonies by "creeping"--"swarming."; (4) Shortening of vegetative cells in the course of development accompanied in some species by thickening of the body as compared with its thickness at the beginning of development. (5) Conversion of vegetative cells into microcysts; (6) Formation of characteristic fruit bodies consisting of cysts; and (7) Characteristic mode of division by cross constriction of the cell body. (Author)

Neurology and Psychiatry

Banshchikov, V. M. and Solyarov, G. V.
THE IMPORTANCE OF DRUG-INDUCED AND EXPERIMENTAL PSYCHOSES IN UNDERSTANDING CERTAIN GENERAL PROBLEMS IN PSYCHIATRY (Znachenie Lekarstvennykh i Eksperimental'nykh Psikhiatrii) tr. by Wanda M. Feeley. Reported of the Conference of the Moscow Scientific Society of Neuropathologists and Psychiatrists, 20 May 59. Apr 61, 9p. PSC no. 60-2186.
Order from OTS or SLA $1.10 62-24311

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60 [no. 1] p. 77-84.

DESCRIPTORS: *Drugs, *Psychoses, Psychiatry, Dosage, Toxic tolerances, Infections, Reasoning, Emotions, Etiology, *Hallucinogens, Nervous system.

Novikov, E. Ch., Farber, D. A. and others.
THE PROMPT DIAGNOSIS AND LOCALIZATION OF INTERACRANIAL TRAUMA IN NEONATAL INFANTS. [1963] [10]p. FASEB manuscript no. S 399-2.
Order from OTS or SLA $1.10 63-19362

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 10, p. 44-48.

DESCRIPTORS: Diagnosis, *Brain, Shock (Pathology), *Wounds and injuries, *Infants, Gynecology, Neurology, Edema, Spinal cord, Hemorrhage, Muscles, Electroencephalography, Reaction (Psychology).

Pathology

TREATISES OF THE SECTION OF MEDICAL SCIENCES, 1957 [VOL. 2] NO. 1, P. 1-288. 1963, 251p. PL-480 HEW.
Order from OTS $2.50 61-11335/2

Trans. of [Polska Akademia Nauk]. Wydzial Nauk Medycznych. Rozprawy, 1957 [v. 2] no. 1, p. 1-288.

DESCRIPTORS: *Medicine, Pathology, *Ballistocardiography, *Skull, Spinal column, *Thyroid gland, *Tuberculosis, PH, *Osmotic pressure, *Sensory mechanisms, Blood vessels, *Cerebral cortex, Pain.

Contents:
Ballistocardiography in the light of personal research, by S. Baber
From the problems of pathology of the base of the skull and its vertebral border, by S. Falkiewiczowa and T. Kaniowski
Thyroid gland and experimental tuberculosis, by C. Maslinski
The effect of hydrogen Ions Concentration and osmotic and hydrostatic pressure on the function of the interoceptors of extremital vessels, by J. Ryzewski
The importance of cerebral cortex for the sensation of pain, by L. Stepien.

Arshavskii, I. A.
PROBLEM OF THE PHYSIOLOGICAL BASIS FOR THE NURSING OF PHYSIOLOGICALLY MATURE AND IMMATURE NEONATES. 27 Aug 62, 11p. 12 refs. NIH no. 8-27-62.
Order from OTS or SLA $1.60 62-32900

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 2, p. 26-32.

DESCRIPTORS: Physiology, *Infants, Adaptation (Physiology), Body weight, Temperature, Humidity, *Nutrition, Pediatrics

Data of physiological analysis are listed substantiating an early breast feeding of neonates (20-30 minutes after birth) and 8-fold nursing in 24 hours (following every successive natural excitement of the tropic center). The so-called physiological loss of body weight, physiological jaundice, high erythrocyte and hemoglobin content, physiological bradycardia, anuria and other symptoms are, as shown by the analysis, not a standard normal condition, but denote a highly pronounced disturbance of the homeostasis, caused by the ordinarily accepted late initial breast feeding of the newborns. The study of the most of the above-cited symptoms revealed their absence in neonates fed by the breast 20–30 minutes after their birth. (Author)

Bail'ozov, D., Panaiotova, M., and Veselinov, V.
METHODS OF DETECTION OF THE STAPHYLOCOCCAL ENTEROTOXIN (O Metodakh Obnaruzheniya Stafilokokkovogo Enterotoksina). 6 Nov 62, 9p. refs. Trans. V-1806.
Order from OTS or SLA $1.10 63-13027

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 8, p. 101-104.

DESCRIPTORS: Detection, *Staphylococcus, *Bacterial toxins, Laboratory animals, Gastrointestinal system, Laboratory animals, Cats.

The most reliable method of detecting enterotoxins in staphylococcal cultures is the intravenous introduction into cats of a culture filtrate in doses of 2-3 ml per kilogram. Reaction does not depend on the age or the weight of the cats. This has been confirmed by Stolmakova's conclusions regarding the fitness not only of kittens, but also of adult cats [to be used] in a test for the detection of staphylococcal enterotoxins. The formation of enterotoxins was apparent most clearly after a 3-6 day cultivation of staphylococci. Preliminary feeding of cats prior to the introduction of staphylococcal cultures is an essential condition in obtaining positive results. The large amphibian from Rana ridibunda ridibunda which is very closely related to Rana esculenta, and young pigeons are not suitable for the detection of staphylococcal enterotoxins. (Author)

Barilyak, R. A.
THE MORPHOLOGY AND ORIGIN OF THE MIKULICZ CELLS. [1963] [14]p. (figs. omitted) 47 refs. FASEB manuscript no. S 149-2.
Order from OTS or SLA $1.60 63-19374

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 6, p. 41-47.

DESCRIPTORS: Morphology, *Cells (Biology), *Histological techniques, Leukocytes, Phagocytosis, Diagnosis, Tissues (Biology).

The cytological method is very convenient for studying the cells of the scleromatous granuloma and for diagnosing the disease. According to cytolocal investigations, Mikulicz cells are larger than reported in the literature; they may attain a diameter of 60 μ or more. As a rule the nucleus of the Mikulicz cell is leptochromatic. Vacuole formation in the Mikulicz cell is a response reaction to the specific irritant action of scleroma bacilli phagocytosed by this cell. The presence of a segmented neutrophilic leukocyte in the Mikulicz cell may be regarded as the result of phagocytosis by the Mikulicz cell. The scleroma bacilli found in the Mikulicz cell die; this is shown morphologically by swelling, a change in their staining properties, and the subsequent dispersal of their substance. Mikulicz cells are derived from polyblast macrophages. (Author)

Domaradskii, I. V.
THE "TOXIN-ENZYME" HYPOTHESIS AND THE ROLE OF BACTERIAL ENZYMES IN THE PATHOGENESIS OF INFECTIONS. 12 Mar 63 [26]p. 134 refs. FTD-TT-63-162; AD-400 512.
Order from OTS or SLA $2.60 63-19556

Unedited rough draft trans. of #Uspekhi Sovremennoi Biologii (USSR) 1962, v. 54, no. 1, p. 57-70.

DESCRIPTORS: *Toxins and antitoxins, *Enzymes, Theory, *Bacteria, Pathology, *Communicable diseases, Toxicity.

Eder, M. and Wrba, H.
[FERMENTHISTOCHEMICAL RESEARCH OF BIOLOGY OF ASCITES TUMOR CELLS AND THEIR CHANGE TO SOLID TUMORS] (Fermenthistochemische Untersuchungen zur Biologie von Ascitestumoren und Ihrer Umwandlung in Solide Geschwülste). [1962] 16p. (figs. omitted) 13 refs.
Order from SLA $1.60 63-10711

Trans. of Zeitschrift für Krebsforschung (West Germany) 1961, v. 64, p. 353-365.

DESCRIPTORS: Biology, Edema, *Neoplasms, Cells (Biology), Morphology, Enzymes, Histology, *Cytochemistry, Leukocytes, Necrosis, Tumors.

The morphological and enzyme histochemical behavior of the tumor cells during the transition from the ascites form into solid tumors after subcutaneous implantation shows differences between the Ehrlich tumor and the Yoshida and Walker tumors. In the transplant of all three ascites tumors, a morphological differentiation into a large-celled outer zone and a small-celled center developed between 6 and 24 hours. In the outer zone the reaction for DPN-diaphorases and DPN-dependent dehydrases are strongly positive, in the center they are negative. The succinic dehydrase shows an opposite behavior. An additional layering arises by a leucocyte and necrotic zone at the border of the central tumor part. (Author)

Fil'chagin, N. M.
THE EFFECT OF A LOW PROTEIN DIET AND OF A DEFICIENCY OF SULPHUR-CONTAINING AMINO ACIDS ON THE QUANTITY OF PHOSPHOPYRIDINENUCLEOTIDES IN THE LIVER OF RATS (Vliyanie Nedostatochnogo Soderzhaniya Belka v Pishche i Soderzhashchikh Seru Aminokislot na Kolichestvo Fosfopiridinnukleotidov v Pecheni Krys). Apr 63 [10]p. 10 refs. RTS-2244.
Order from OTS or SLA $1.10 63-19140

Trans. of Vopr[osy] Pitaniya (USSR) 1961, v. 20, no. 5, p. 26-31.

DESCRIPTORS: *Proteins, Nutrition, *Diet, *Deficiency diseases, Sulfur, Amino acids, *Nucleotides, Liver, Rats, *Phosphorus compounds, *Pyridines, Methyl radicals, Carboxylic acids, Amides, Methionine, Cystine.

Protein deficiency in the diet (9% casein) results in a fall in the content of phosphopyridinenucleotides in the liver. There is a parallel increase in the excretion of N^1 - methylnicotinamide in the urine. The inclusion in the diet of D L-methionine and L-cystine increases the content of phosphopyridinenucleotides in the liver and reduce the excretion of N^1 - methylnicotinamide in the urine. Amino acids devoid of sulphur (D, L-lysine, L-tyrosine and L-glutamic acid) do not possess this property.

Kalyuzhnaya, R. A.
THE ROLE OF INDIVIDUAL REACTIVITY IN THE DEVELOPMENT AND SUBSEQUENT COURSE OF CHRONIC TOXICITY IN CHILDREN. [1963] [23]p. (refs. omitted). FASEB manuscript no. S 401-2.
Order from OTS or SLA $2.60 63-19360

Trans. Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 10, p. 59-67.

DESCRIPTORS: *Toxicity, *Toxic tolerances, *Children, Reaction (Physiology), Growth, *Diseases, Communicable diseases, Autonomic nervous system, Cholinesterase, Properdin, Heart, *Antigen-antibody reactions, Pathology.

Kulagin, S. M., Fedorova, N. I., and Ketiladze, E. S.
LABORATORY OUTBREAK OF HEMORRHAGIC FEVER WITH A RENAL SYNDROME: CLINICO-EPIDEMIOLOGICAL CHARACTERISTICS (Laboratornaya Vspyshka Gemorragicheskoi Likhoradki s Pochechnym Sindromom: Kliniko-Epidemiologicheskaya Kharakteristika). 5 Apr 63, 18p. (figs. omitted) 18 refs. Trans. V-1825.
Order from OTS or SLA $1.60 63-19106

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunogiologii (USSR) 1962, v. 33, no. 10, p. 121-126.

DESCRIPTORS: Communicable diseases, *Nephritis, Etiology, Epidemiology, *Fevers, Disease vectors, Rodents, Immunity, *Virus diseases, Diseases, *Hemorrhage.

Likhachev, N. V.
DETERMINATION OF THE DEGREE OF ACTIVITY OF AN ANTIANTHRAX SERUM USED ON WHITE MICE [Opredelenie Aktivnykh Svoistv Protivosibireyazvennoi Syvorotki na Belykh Myshakh]. 30 Oct 62 [6]p. ABL Trans. no. 697; JPRS: R-2896-D; AD-290 949.
Order from OTS or SLA $1.10 63-19230

Trans. of [Gosudarstvennyi Nauchno-Kontrol'nyi Institut Veterinarnykh Preparatov. Trudy] (USSR) 1956, v. 6, p. 262-264.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-14677 [1959] 4p.

DESCRIPTORS: Immunology, *Toxins and antitoxins, *Anthrax, Immunity, *Biological assay. Serum, Culture media.

A series of experiments aimed at discovering a more precise method for determining the strength or activity of antianthrax serum than the presently widespread method of testing with innoculation of rabbits is described. The author calibrated the strength of antianthrax serum of strain STI on the basis of the number of white mice dying upon innoculation with various concentrations of the serum. (Author)

Munteanu, Nicolae.
BLOOD PREPARATIONS AND THEIR USE. 30 Apr 63, 3p. JPRS: 19002.
Order from OTS $0.50 63-21727

Trans. of Sanatatea (Rumania) 1963, v. 11, no. 3, p. 19.

DESCRIPTORS: *Blood, Blood plasma, Blood serum, Serum albumin, Blood proteins, *Blood transfusions, Therapy, Blood disorders, Shock (Pathology), Burns.

Neukomm, S. and Bonnet, J.
STUDIES ABOUT CANCEROGENIC MATTER IN TOBACCO SMOKE FROM THE ROMAND ANTICANCER CENTER, LAUSANNE EXPERIMENTAL RES. SERVICE. [1962] 8p.
Order from K-H $10.00 K-H 8003 d

Trans. of Strahlentherapi[e] Sonderb[and] (Germany) 1957, v. 37, p. 128-132.

DESCRIPTORS: *Cancer, *Tobacco, *Smokes, Medical research.

Nezhintseva, A. V.
PNEUMONIA ASSOCIATED WITH CYTOMEGALY IN CHILDREN. [1963] [11]p. 13 refs. FASEB manuscript no. S 146-2.
Order from OTS or SLA $1.60 63-19373

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 6, p. 12-17.

DESCRIPTORS: *Pneumonia, Lungs, Diseases, *Infants, *Salivary glands, Pathology, Virus diseases, Tissues (Biology), Cells (Biology).

Generalized cytomegaly in children during the first months of life may follow a severe course in some cases, and may lead to death. In children born at term and developing generalized cytomegaly with the presence of cytomegalic elements in the lungs, focal pneumonias are frequently observed, with marked interstitial changes, round-cell infiltration of the interalveolar septa and peribronchial tissue, and the formation of nodules of lymphocytes and reticulum cells in the form of follicles. In premature, weak infants, before the age of weaning, in association with cytomegaly changes characteristic of plasma-cell interstitial pneumonia are frequently observed, with the presence of a peculiar frothy exudate in the alveoli. The marked inflammatory changes in the interstitial tissue of the lung, and the cellular composition of the infiltrated areas, in which lymphoid cells and plasma cells predominate, indicate that the morphological changes taking place in the lungs in cytomegaly are similar to those observed in other virus diseases. (Author)

Pastukhov, B. N., ed.
ANTHRAX: [ORGANIZATIONAL AND METHODOLOGICAL MATERIALS]. 1 Aug 62 [147]p.
ABL Trans. no. 683; JPRS: R-2656-D; AD-291 635
Order from OTS or SLA $11.00 63-19233

Trans. of mono. [Sibirskaya Yazya; Sbornik Organizatsionno-Metodicheskikh Materialov] Moscow, 1962 [147p.] compiled by E. N. Shlyakov and V. A. Sinodskaya.

DESCRIPTORS: *Anthrax, Bacillus anthracis, Diseases *Veterinary medicine, Animals, Sanitary engineering, Etiology, Diagnosis, Immunization, Instruction manuals.

This is an instruction manual for the control of anthrax in man and animals. It outlines the general epidemiological procedures for physicians and sanitary engineers. It contains the regulations for prevention of anthrax in slaughter houses and collective farms. Instructions are given for the veterinarian and sanitation inspection of animal imports and directions for destruction and disposal of infected animals.

Pavlovskii, E. N.
PARASITOLOGICAL FACTORS IN THE NATURAL FOCI OF TAIGA ENCEPHALITIS. 21 Nov 62 [8]p.
ABL Trans. no. 699; JPRS: R-2908-D; AD-291 639.
Order from OTS or SLA $1.10 63-19242

Trans. of Zoologicheskii Zhurnal (USSR) 1940, v. 19, no. 2, p. 333-335.

DESCRIPTORS: *Encephalitis viruses, *Ticks, Parasites, *Disease vectors, Etiology, Virus diseases, Etiology, Diseases.

This work was done in two places: inhabited and wild taiga. In the former, studies of Ixodes persulcatus ticks for the virus of spring-summer (taiga) encephalitis were all negative; in the latter, extensively positive. The same applied to the mammalian hosts. Haemaphysalis concinna ticks were shown to be virus vectors from nymph to adult stages and to transmit the virus transovarially to their progeny. Mice can be infected with emulsions of I. persulcatus organs or may, instead, become immune. The same alternatives hold in the case of infected tick bites. Which of the two occurs depends on the quantity of virus inoculated, the number of ticks biting, the degree to which they are infected, the duration of blood-sucking, the conditions of the virus, the environment and the animal. The fact that high serum antibody titers are found in man and cattle in the wild taiga, low titers in the inhabited taiga, and an intermediate situation at a place between the two is cited as proof. (Author)

Ryzhkov, E.
PNEUMOMYCOSES. Jan 63 [17]p. 14 refs.
ABL Trans. no. 710; JPRS: R-2936-D.
Order from OTS or SLA $1.60 63-19241

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1962, v. 25, p. 107-120.

DESCRIPTORS: *Pneumonia, *Fungus infections, Etiology, Antibiotics, Diagnosis, Therapy, Adaptation (Physiology), *Lungs, Diseases.

This article describes the various forms of pneumomycoses and the clinical course, physical findings, X-ray picture, and outcome to be expected in each. The cultural characteristics of the respective fungi are also described. Distinction is made between primary pneumomycoses and secondary pneumomycoses and in connection with the latter, a brief discussion is given of the underlying conditions predisposing to them. The article deals for the most part only with the pulmonary lesions of these respective mycoses and reference is made to other articles for a fuller treatment of the clinical conditions as a whole. A brief discussion is given of the microscopic findings in the lesions of the various pneumomycoses and a few remarks are made on the differential diagnosis and treatment of these diseases. (Author)

Salganik, K. P.
USE OF ACTH IN TREATING TUBERCULOUS MENINGITIS AND MILIARY TUBERCULOSIS IN CHILDREN. [1963] [9]p. FASEB manuscript no. S 237-2.
Order from OTS or SLA $1.10 63-19390

Trans. of Sovetskaya Meditsina (USSR) 1962, v. 25, no. 1, p. 137-139.

DESCRIPTORS: *Adrenocorticotropic hormone, *Tuberculosis, *Neisseriaceae, *Children, Therapy, Lungs, *Mycobacterium tuberculosis, Meningitis.

Vorob'ev, A. A., Lukin, E. P., and Samorodov, L. M.
DETERMINATION OF IMMUNOGENIC PROPERTIES OF SORBED BOTULIN TOXOIDS OF TYPES C AND E ON ALBINO MICE (Opredelenie Immunogennykh Svoistv Sorbirovannykh Botulinovykh Anatoksinov Tipov C i E na Belykh Myshakh). 8 Apr 63, 12p. 12 refs. Trans. V-1827.
Order from OTS or SLA $1.60 63-19108

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 3, p. 123-127.

DESCRIPTORS: Determination, *Immunity, Sorption, Vaccines, *Botulism toxoid, Mice, *Biological assay, Toxins and antitoxins.

Zhvaniya, T. O.
HEMOTRANSFUSION REACTIONS AND COMPLICATIONS CAUSED BY TRANSFUSION OF BACTERIA-CONTAMINATED BLOOD, THEIR PROPHYLAXIS AND THERAPY, CONCLUSIONS. 13 May 63, 2p. JPRS: 19153.
Order from OTS $0.50 63-21806

Trans. of mono. Gemotransfuzionnye Reaktsii i Oslozhneniya, Vyzannye Perelivaniem Bakterial'no -Zagryzanennoi Krovi, Ikh Profilaktika i Lechenie, Tbilisi, 1961, p. 77-78.

DESCRIPTORS: *Blood transfusions, *Contamination, Bacteria, Inhibition, Therapy, Toxicity.

Pharmacology and Toxicology

PHARMACOLOGY AND TOXICOLOGY: [SELECTED] ARTICLES. 5 June 63, 16p. 69 refs. JPRS: 19568.
Order from OTS $2.25 63-21987

Trans. of #Farmakologiya i Toksikologiya (USSR) 1962, v. 25, no. 3, p. 320-335, 339-345; no. 5, p. 519-530; no. 6, p. 679-698; 1963, v. 26, no. 1, p. 10-17.

DESCRIPTORS: *Pharmacology, *Toxicity, *Vasoactive agents, *Butanes, Muscle relaxants, *Ammonium compounds, *Piperidines, *Ethylenes, Curare alkaloids, Nervous system, Sympatholytic agents, Alkyl radicals, Phosphorus acids, *Esters, *Cholinesterase inhibitors, Muscles, *Chlorides, *Amines, *Alkoxy radicals, *Hydrogen compounds.

Contents:
Comparative study of the curariform and other pharmacological properties of the dimethiodide and dimethylsulfomethylate of 1, 4-Bis-(9-methyl-3, 9-diazabicyclo-(3, 3, 1)-nonano-3) butane, by B. A. Medvedev
The effect of bis-quaternary ammonium compounds of quinuclidine on transmission of the nerve impulse in sympathetic ganglia and on myoneural conduction, by F. Sadritdinov
Biological activity of dialkylphosphinic acid esters and their comparative characteristics, by I. V. Zaikonnikova
The prevention and treatment of experimental hyperkinesias with anticholinergic agents, by P. P. Denisenko
A new anticholinergic agent-aprolidin, by M. D. Mashkovskii and K. A. Zaitseva
The curariform properties of the dichloride of 1, 6-di-(3', 3'-benzylquinuclidyl-1', 1') hexamine (qualidil) by M. D. Mashkovskii and F. Sadritdinov
The pharmacology of some 2-, 3-mono-and 2, 3-disubstituted quinuclidines, by I. M. Sharapov
The pharmacology of 5-methoxytryptamine hydrochloride (mexamine)by M. D. Mashkovskii and G. S. Arutyunyan.

Aleksandrov, N. I., Gefen, N. E. and others.
STUDY OF THE METHOD OF AEROSOL IMMUNIZATION WITH DUST PLAGUE VACCINES DURING MASS IMMUNIZATION [Aerozol'naya Immunizatsiya Sukhimi Pylevymi Vaktsinami i Anatoksinami. Soobshchenie 8. Izuchenie Metoda Aerozol'noi Immunizatsii Pylevoi Protivochumnoi Vaktsinoi na Shirokikh Kontigentakh Lyudei]. Communication 8 [on] Aerosol Immunization with Dry Dust Vaccines and Toxoids. 17 Sep 62 [9]p. ABL Trans. no. 686; JPRS: R-2775-D; AD-291 038.
Order from OTS or SLA $1.10 63-19234

Trans. of #Zhurnal Mikrobiologii [Epidemiologii i Immunobiologii] (USSR) 1962 [v. 33] no. 7, p. 46-50. Another trans. is available from OTS or SLA $1.10 as 62-32595, 20 Aug 62, 10p.

DESCRIPTORS: *Inhalation immunization, *Population, Immunization, Aerosols, *Plague, Vaccines, Adaptation (Physiology), Antigen-antibody reactions, Bacterial aerosols, Pasteurella.

For abstract see Technical Translations 8: 48, 1962.

Bakhrakh, E. E., Egorova, V. D., and Pavlova, L. P.
CHARACTERISTICS OF THE POLYSACCHARIDE-CONTAINING FRACTION FROM PASTEURELLA PESTIS (WITH SUMMARY). 27 Sep 62 [13]p. 12 refs.
ABL Trans. no. 691, JPRS: R-2734-D; AD-291 637.
Order from OTS or SLA $1.60 63-19236

Trans. of #Zhurnal Mikrobiologii [Epidemiologii i Immunobiologii] (USSR) 1962 [v. 33] no. 6, p. 126-130.

DESCRIPTORS: *Pasteurella, *Chemical analysis, Chromatographic analysis, Amino acids, *Saccharides, *Antigen-antibody reactions, Diseases.

The preparation isolated by the White method from Past. pestis does not represent a pure polysaccharide. Non-purified fractions contained a considerable amount of protein admixtures, from which it could be separated via repeated, fractionated precipitation with alcohol, processing with chloroform as per Sevag, prolonged hydrolysis with 0.1 N acetic acid, or protein precipitation with trichloracetic acid. The preparation purified of protein admixtures represents a stable polysaccharide-polypeptide complex possessing serological activity and the property of inducing a positive allergic reaction in guinea pigs which had recovered from plague or had been immunized against this infection. Removal of the polypeptide portion of the complex by mean of trypsin-processing led to a marked reduction of the allergic effect of the preparation. (Author)

Chabbert, Yves.
SOME OBSERVATIONS ON THE IN VITRO ACTIVITY OF COLIMYCIN. [1963] [12]p. 13 refs.
Available on loan from SLA 63-14756

Trans. of Minerva Med[ica] (Italy) 1958, v. 49, 5 Dec, p. 4483-4488.

DESCRIPTORS: Drugs, *Antibiotics, *Colimycin, Germicides.

It is shown that Colimycin, although less active than polymixin, in vitro, creates with polymixin a family of original antibiotics, characterized by a highly bacteriostatic action and above all, bacteriocidal on gram-negative bacteria. Colimycin in combination with other antibiotics is capable of notable synergism, especially when other antibiotics alone have moderate activity. (Author)

Dettli, L. and Spring, P.
CLINICAL INVESTIGATION OF A NEW SULFONAMIDE DIURETIC (CYCLOPENTHIAZIDE) (Klinische Prüfung Eines Neuen Sulfonamiddiuretikums (Cyclopenthiazid)). [1962] 13p. 13 refs.
Order from SLA $1.60 63-10543

Trans. of Deutsche Med[izinische] W[ochenschrift] (West Germany) 1961, v. 86 [no. 48] p. 2327-2332. Trans. of complete mono. (of which above article is a condensation) is available from SLA $3.60 as 62-14477 [1962] 34p.

DESCRIPTORS: *Chlorothiazide diuretics, *Sulfonamides, *Diuretics, Drugs, Edema, Liver, Diseases, Kidneys, Excretion, Urine, Sympatholytic agents, Vasoactive agents.

Cyclopenthiazide is about 70 times greater than that of hydrochlorothiazide. In all other areas an effect agreeing with that of hydrochlorothiazide was found; the same maximal absolute effect, no inhibition of carbonic anhydrase in vivo, slight increase of in vivo kaliuresis. The effect of a single dose attains its maximum after about 9 hours and has subsided in less than 24 hours. Toxicity tests also agree with those with hydrochlorothiazide: slight reduction in potassium and chloride and increase in alkaline reserve in the blood, no toxic side effects. In most forms of edema, cyclopenthiazide had a reliable effect in daily doses of 0.5 mg. Edema in nephropathy responded only when the glomerular filtrate amounted to more than 20 ml./min. Cyclopenthiazide produced unsatisfactory effects in therapy of ascites in liver cirrhosis. In acute pulmonary edema doses of 2 to 3 mg. are recommended. No toxic side effects were observed even after months of administration. None of the patients complained of subjective side effects. On prolonged administration of cyclopenthiazide, a hypochloremic alkalosis and occasionally a mild hypokaliemia develops. This did not produce any clinical phenomena or loss of effect. But caution is advisable in diuretic therapy of liver cirrhosis (severe hypokaliemia, hepatic coma). In gout and in severe nephropathy one must watch for an increase in renal retention.

Fleischhauer, Günter.
ON RESISTANCE TESTS AND CLINICAL EXPERIENCES WITH COLISTIN (Über Resistenzprüfungen und Klinische Erfahrungen mit Colistin). [1963] 8p. 28 refs.
Available on loan from SLA 63-16499

Trans. of Deut[sche] Med[izinische] Woch[en]schr[ift] (West Germany) 1960, v. 85, no. 39, p. 1717-1719.

DESCRIPTORS: *Biological assay, *Colimycin, Antibiotics.

Holtz, Peter.
ARTERENOL AND HYPERTONIA. [1963] 12p. 24 refs.
Order from SLA $1.60 63-14565

Trans. of Z[eitschrift] für [die] Ges[amte] Innere Med[izin und ihre Grenzgebiete] (East Germany) 1951, v. 6, p. 65-68.

DESCRIPTORS: *Epinephrine, *Hypertension, Drugs, Blood pressure.

Junkmann, K. and Suchowsky, G. K.
THE ANTIPHILOGISTIC EFFICACY OF GLUCOCORTICOID ESTERS IN LOCAL APPLICATION. [1962] 5p. (figs. tables refs. omitted).
Order from SLA $1.10 63-10329

Trans. of Arzneimittel-Forsch[ung] (West Germany) 1960, v. 10, p. 921-923.

DESCRIPTORS: Inhibition, *Inflammation, Drugs, *Corticosteroid agents, Predisone, Predisolone, Fatty acids, Esters, *Injection (Medicine), Adaptation (Physiology).

Comparative tests were made in the granuloma pouch of rats to determine the antiphlogistic effect of different fatty acid esters of the most common glucocorticoids. It was found that the number of carbon atoms on the esterifying acid influences the efficacy of the ester. Optimum efficacy varies, and depends on an individual acid for each corticoid. (Author)

Kolomoitsev, L. R., Kazarynova, N. F. and others.
ANTIBACTERIAL EFFECT OF SOMEN-SUBSTITUTED PYRIDINE DERIVATIVES, REPT. I. Mar 63 [10]p. 6 refs. ABL Trans. no. 755; JPRS: R-3048-D.
Order from OTS or SLA $1.10 63-19553

Trans. of Mikrobiol[ogichnyi] Zh[urnal] (USSR) 1962, v. 24, no. 3, p. 23-28.

DESCRIPTORS: *Germicides, *Chemotherapeutic agents, *Pyridine derivatives, Shigella, Bacillus anthracis, Staphylococcus, *Biological assay, Escherichia, Bacteria.

Fourteen species of microorganisms were tested for the antibacterial effect of 18 pyridine derivatives. The test preparations were synthesized in our laboratory from components of pyridine bases of coal tar with preparations X, XI, XIII-XVIII synthesized for the first time by our original methods. Seven of the tested preparations were rather active in vitro tests. Greatest activity produced by derivatives of 4-(p-dimethylaminophenyl)-pyridine against pathogenic B. coli, dysentery bacilli, B. anthracoides and Staphylococcus. (Author)

Koranyi, Andreas and Szent-Gyoergyi, Albert v.
CONCERNING THE SUCCINIC ACID TREATMENT OF DIABETIC ACIDOSIS. [1963] 18p. 6 refs.
Order from SLA $1.60 63-14576

Trans. of Deutsche Medizinische Wochenschrift (Germany) 1937, v. 63, no. 27, p. 1029-1033.

DESCRIPTORS: *Succinic acids, Therapy, *Diabetes, *Acidosis, Drugs.

Kracht, J.
THE ADRENAL CORTEX IN CHEMICAL ADRENOSTASIS (Die Nebennierenrinde bei Chemischer Adrenostase). Jan 62, 10p. 8 refs.
Order from SLA $1.10 62-14348

Trans. of Allergie u[nd] Asthma (East Germany) 1961, v. 7, no. 4/5, p. 264-271.

DESCRIPTORS: *Adrenal cortex, Secretion, Inhibition, Adrenal glands, Hormones, Androgens, *Adrenocorticotropic hormone, Drugs, Pharmacology, Toxicity, Propanols, Butanones, Methyl radical, Hexaphenylethanes, Chlorides.

The morphological changes obtained in the adrenal cortex of rats and dogs following administration of adrenostatic agents were studied. Three various effects, according to the compound given were observed: (1) Increased hormone precursor storage reaction (amphenone B, Δ_4-cholestenone-3). (2) ACTH-type reaction (Metopirone-SU 4885). (3) Primary adrenocortical atrophy (DDD). The variety of effects obtained in the adrenal cortex is compared with the uniformity of throid tissue reaction following the use of antithyroid compounds. (Author)

Levi, I. S.
SYMPOSIUM ON THE CHEMISTRY OF CARCINOSTATICS (Simpozium po Khimii Protivoopukholevykh Veshchestv). 12 Dec 62, 4p. NIH no. 12-13-62.
Order from OTS or SLA $1.10 63-15163

Trans. of #Voprosy Onkologii (USSR) 1961, v. 7, no. 11, p. 108-110.

DESCRIPTORS: *Conferences, *Drugs, *Tumors, *Antineoplastic agents.

Mainzer, Fritz.
GLUTAMIC ACID AS A SUBSTITUTE FOR SODIUM CHLORIDE. [1963] 6p. 4 refs.
Order from SLA $1.10 63-14583

Trans. of Wiener Klinische Wochenschrift (Austria) 1937, v. 50, no. 41, p. 1423-1424.

DESCRIPTORS: *Glutamic acids, *Chlorides, *Sodium compounds, Urea, Excretion, Substitutes, Nephritis, Salts.

Metayer, M. and Jacob, J.
PREPARATION AND PHARMACODYNAMIC PROPERTIES OF SOME ESTERS OF BETAINE. [1963] 10p. 7 refs.
Order from SLA $1.10 63-14589

Trans. of Ann[ales] Pharm[aceutiques] Franç[aises] 1952, v. 10, p. 435-440.

DESCRIPTORS: *Betaine compounds, Preparation, Pharmacology, Esters, *Vaso-active agents, *Synthesis (Chemistry), Drugs.

Moiraghi-Ruggenini, A. and Micheletti, A.
COLIMYCIN: SYNTHESIS OF THEORETICAL AND PRACTICAL KNOWLEDGE AFTER FIVE YEARS OF THERAPEUTIC USE (Colimicina). [1963] 13p. 76 refs.
Available on loan from SLA 63-16433

Trans. of il Farmaco [Edizione Pratica] (Italy) 1961, v. 16, Oct, p. 487-498.

DESCRIPTORS: *Colimycin, Synthesis, Therapy, Antibiotics, Drugs.

Neveling, R. and Kruse, K. E.
ON NICOTINE NYSTAGMUS. [1962] 9p.
Order from K-H $11.25 K-H 11363 d

Trans. of article from Archiv für Ohren-, Nasen- und Kehlkopfheilkunde (West Germany) n. d.

DESCRIPTORS: *Nicotine, *Nystagmus

Puchs, O. and Frey, H. H.
EFFECT OF LOW CONCENTRATIONS OF PLASTICIZER IN VINYL CHLORIDE POLYMERS. Presented to the Expanded Macromoldcular Colloquim, Freiburg, 6-8 Mar 58. [1963] [11]p. (figs. omitted) 8 refs.
Order from SLA $1.60 63-14184

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 5, p. 213-216.

DESCRIPTORS: Polymers, *Polyvinyl chloride, *Plasticizers, Vinyl radicals, Chlorides, Mechanical properties, Molecular structure.

The brittling effect occurring in PVC and vinyl chloride mixed polymers with low plasticizer concentrations is explained by the assumption that the plasticizer molecule in low concentrations causes, by solvatation, above all, a stretching of the macromolecule. By this solvatation the macromolecules become immovable and make the "softened" material harder. Only with higher concentrations of plasticizer is the peculiar plasticizing effect of the plasticizer fulfilled. The data obtained for several plasticizers, for pure PVC, for a vinyl chloride mixed polymer, for plasticizer to which was added a precipitant for the polymer, may be arranged easily in this conception. Some recently appearing articles concerning this same effect are examined critically. (Author)

Scheiffarth, F., Zicha, L., and Förster, W.
COMPARATIVE INVESTIGATIONS OF THE EOSINOPENIC EFFECTS OF VARIOUS GLUCOCORTICOID ESTERS AND OF 1-HYDROXY-TRYPTOPHAN IN HUMAN BEINGS. [1962] 11p. (figs. tables refs. omitted).
Order from SLA $1.60 63-10327

Trans. of Arzneimittel-Forsch[ung] (West Germany) 1961, v. 11, no. 7, p. 602-606.

DESCRIPTORS: Drugs, Pharmacology, *Eosinophils, *Corticosteriod agents, Esters, *Tryptophan, Serotonin, Prednislone.

12 different prednisolone esters and dexamethasone esters were examined in an eosinophil test with groups that each had 10 to 20 patients. Significant eosinopenic effects were observed only for glucocorticoid esters with rapid onset and short duration of action. Application of long-acting esters does not produce significant lowering of eosinophils, even with large doses. Oral or parenteral application of glucocorticoids over a longer period caused only temporary lowering of the number of eosinophilic leucocytes. During the therapy, in spite of uniform daily doses, there was an increase of eosinophils. Endogenous serotonin produced by application of 1-hydroxytryptophane does not significantly influence the number of eosinophils. (Author)

Sigwald, J. and Payot, J.
SYMPTOMATIC THERAPEUTIC ACTION IN CYCRIMINE HYDROCHLORIDE IN PARKINSON'S SYNDROME (Action Therapeutique Symptomatique du Chlorhydrate de Cycrimine sur les Syndromes Parkinsoniens). [1962] 10p. (refs. omitted).
Order from SLA $1.10 63-10317

Trans. of la Presse Médicale (France) 1955, v. 63, p. 375-376.

DESCRIPTORS: Chemotherapy, *Parkinsonism, Drugs, *Parasympatholytic agents, Dosage, *Chlorides.

Cycrimine hydrochloride is a synthetic compound chemically related to trihexyphenidyl which has been used for several months in 34 patients with Parkinson's disease. It has a good symptomatic action and is well tolerated. This study indicates that cycrimine should be placed among the most active anti-Parkinsonism compounds: isothazine, trihexyphenidyl, procyclidine. (Author)

Solti, F., Iskum, M., and Zoltan, E. T.
THE EFFECT OF NICOTINE ON VEIN PRESSURE AND VEIN TONUS. [1962] 11p.
Order from K-H $13.75 K-H 11627g

Trans. of article from Acta Medica (Hungary) n.d.

DESCRIPTORS: *Nicotine, Veins, *Blood pressure, Cardiovascular system, *Blood vessels.

Spynu, E. I.
THE EFFECT OF SOME PHOSPHORORGANIC INSECTICIDES ON THE HIGHER NERVOUS SYSTEM AND ON THE ACTIVITY OF CHOLINESTERASE: [WITH DISCUSSIONS] (Deistvie Nekotorykh Fosfororganicheskikh Insektitsidov na Vysshuyu Deyatelnost' i Aktivnost' Kholinesterazy) tr. by V. A. Solodukhin. [17]p. (foreign text included) 7 refs. [CSIRO] Trans. no. 5924.
Order from OTS or SLA $1.60 62-33097

Trans. of mono. Khimiya i Primenenie Fosfororg. Soedinenii [sic] n.p., n.d., p. 336-343.

DESCRIPTORS: *Phosphorus compounds, Organic compounds, *Insecticides, *Nervous system, *Cholinesterase, Enzymes, *Poisoning.

Spynu, E. I.
RESULTS OF EXPERIMENTS ON THE TOXICOLOGY OF THIOPHOS (Eksperimental'nye Dannye k Toksikologii Tiofosa) tr. by V. A. Solodukhin. [1962] [12]p. (foreign text included) 3 refs. [CSIRO] Trans. no. 5923
Order from OTS or SLA $1.60 62-33096

Trans. of Farmakologiya i Toksikologiya (USSR) 1957 [v. 20] Prilozhenie, p. 49-53.

DESCRIPTORS: Toxicity, *Poisoning, *Insecticides, Ethyl radicals, Nitrogen compounds, Phenyl radicals, Thio radicals, Phosphates, Chemical properties, Physical properties, Dosage, Pathology, Morphology, Conditioned reflex, Body weight.

Terracol, J.
CANCER AND TOBACCO. [1962] 16p.
Order from K-H $20.00 K-H 3641

Trans. of Rev[ue de] Laryng[ologie, Otologie, Rhinologie] (France) 1958, v. 79, Suppl. p. 1125-1135.

DESCRIPTORS: *Cancer, *Tobacco, Cigarettes, Smokes.

Waser, E. and Stahli, M.
EXPERIMENTS WITH TOBACCO SMOKE, II. [1962] 9p.
Order from K-H $11.25 K-H 3902 d

Trans. of article from Zeitschrift fllr Untersuchung der Lebensmittel (Germany) n.d.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes

Zhdanov, V. M., Ritova, V. V. and others.
A COMPARATIVE STUDY OF THE INTRANASAL AND AEROSOL METHODS OF VACCINATION AGAINST INFLUENZA [Sravnitel' Izuchenie Intranazal'nogo i Aerozol'nogo Metodov Vaktsinatsii Protiv Grippa] tr. by Charles T. Ostertag Jr. Apr 63 [8]p. 1 ref. ABL Trans. no. 767.
Order from OTS or SLA $1.10 63-19554

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962 [v. 33] no. 11, p. 63-67. Another trans. is available from OTS or SLA $1.60 as 63-15464 [1962] 12p.

DESCRIPTORS: *Inhalation immunization, *Injection (Medicine), Nose, Immunity, *Antigen-antibody reactions, *Influenza vaccines, Toxicity.

The reactogenicity of influenza vaccines during the aerosol method of immunization was lower than during the intranasal method. Along with this there were no temperature reactions over 37.5° noted. Other symptoms of vaccinal reaction (head cold, headache, sneezing and others) were observed less seldom during the aerosol method and weren't so sharply expressed. The egg tissue and egg-tissue combined type A_2 vaccine provided the best indices of adaptability and immunological effectiveness. Comparative data testifies to the future prospects and convenience of the aerosol method for the immunization of large masses of the polulation with live influenza vaccine. For a conclusive evaluation of it, further investigations are required. (Author)

Radiobiology

X-RAY CONTRAST MEDIUM, tr. by J. B. 11 Jan 63, 3p.
Order from OTS or SLA $1.10 63-15446

Trans. of French patent 1,118,311, gr. 14, cl. 1, internat'l cl. A61k, by Schering A.G., Germany, appl. 27 Jan 55, granted 12 Mar 56, pub. 4 June 56 (appl. filed in Germany, 6 Feb 54).

DESCRIPTORS: *Contrast media, *X-ray photography, *Radiography, Aminobenzoic acids, Iodides, Acetyl radicals, Solutions, Salts.

The invention relates to a X-ray contrast media containing N-acyl derivatives, preferably N. N'-diacyl derivatives, especially the N. N'-diacetyl derivatives of 3.5-diamino-2.4.6-triiodo-benzoic acid, as well as non-toxic salts and esters of such derivatives, as essential materials producing the contrast; and to the employment of contrast media in the form of aqueous solutions of non-toxic salts of 3.5-diacylamino-, and in particular 3.5-diacetylamino-2.4.6-triiodo-benzoic acids, with organic and/or inorganic bases, possibly in the presence of auxiliary materials, especially viscosity regulating substances. (Author)

Baraboi, V. A. and Matsui, S. P.
THE EFFECT OF SODIUM GALLATE ON THE NUCLEIC ACID CONTENT IN THE ORGANS OF HEALTHY AND IRRADIATED RATS. 23 May 63, 8p. 17 refs. JPRS: 19355.
Order from OTS $0.50 63-21895

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1963, v. 35, no. 1, p. 84-90.

DESCRIPTORS: *Gallium compounds, Sodium compounds, *Nucleic acids, *Radiation effects, Rats, Radiobiology, Spleen, Liver, Mucus, Membranes, Gastrointestinal system.

The present study was concerned with the effect of the intra-abdominal introduction of sodium gallate in a 60 mg dose per kg of weight on the NA content in the liver, spleen, the mucous membrane of the small intestines and testicles of rats which were unirradiated or irradiated with a 750 r dose. The preparation was introduced 30 minutes prior to irradiation.

El'piner, I. E. and Stekol'nikov, L. I.
INSULIN AND UHF, tr. by E. R. Hope. Apr 63, 3p. DSIS T 390 R.
Order from NRCC NRCC C-4384

Trans. of Priroda (USSR) [1963, v. 52] no. 1, p. 100-101. Another trans. is available from OTS $1.00 in 63-21651, JPRS-18854, 23 Apr 63, 37p.

DESCRIPTORS: *Insulin, *Ultrahigh frequency, Hormones, *Ultrasonic radiation, *Radiation effects, Biophysics.

Getsova, A. B. and Volkova, G. A.
UPTAKE OF RADIOISOTOPES BY SOME AQUATIC INSECTS. 27 May 63, 35p. 42 refs. JPRS: 19423.
Order from OTS $1.00 63-21923

Trans. of #Entomologicheskoe Obozrenie (USSR) 1962, v. 41, no. 1, p. 109-124.

DESCRIPTORS: *Radioactive isopotes, *Aquatic animals, *Insects, Absorption (Biological), Temperature, Ecology, Radiobiology.

Different species of insects take up the same element to different degrees. The uptake of radioisotopes varies with the developmental phase of the insect. Mature insects remove large amounts of radioisotopes from the water and thus acquire considerable importance with respect to the migration of radioactive substances. The uptake of radioactive elements depends on time. Radioisotope concentrations in aquatic insects depends on the level of activity of the water. Radioisotope uptake is influenced by the temperature of the environment. The effect of EDTA is subordinate to general physical and chemical laws connected with the mineral metabolism of living organisms.

Grozdenskii, David Emmanuilovich.
RADIOBIOLOGY: [BIOLOGICAL EFFECT OF IONIZING RADIATION] CHAPS. 2-5. 23 Jan 63 [120]p. FTD-TT-62-355.
Order from OTS $2.50 63-11626

Unedited rough draft trans. of mono. Radiobiologiya: Biologicheskoe Deistvie Ioniziruyushchikh Izluchenii, Moscow, 1961, p. 20-120.

DESCRIPTORS: *Radiobiology, *Ionization, *Radiation effects, Chemical reactions, *Cells (Biology), Animals, Plants (Botany), *Health physics, Shielding, Radioactivity, *Radioprotective drugs, Radiochemistry, Radiation hazards, Radiation sickness.

Contents:
Chemical effect of radiation
Radiation effect on cells
Radiation effect on the whole organism.
Chemical protection against radiation and problems of treating radiation sickness.

Livshits, N. N.
INFLUENCE OF IONIZING RADIATION ON THE FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM. 8 Feb 63 [273]p. 353 refs. FTD-TT-62-865; AD-298 218.
Order from OTS or SLA $17.50 63-19251

Unedited rough draft trans. of mono. Vliyanie Ioniziruyushchikh Izluchenii na Funktsii Tsentral'noi Nervnoi Sistemy, Moscow, 1961, 180p.

DESCRIPTORS: *Nervous system, *Radiation effects, *Brain, *Cerebral cortex, *Spinal cord, *Embryos, *Autonomic nervous system, Cardiovascular system, Respiration, Body temperature, Gastrointestinal system, Reflexes, Endocrine glands, Cells (Biology), *Blood circulation, *Hemato-encephalic barrier, Permeability, Dose rate, *Radiation injuries.

Contents:
The effects of irradiation on the functions of the cerebral cortex
Effect of irradiation on the functioning of the brain stem, the cerebellum, and certain other divisions of the brain
Effects of irradiation on the functioning of the spinal cord
Effects of irradiations on the afferent systems
General observation on the effects of ionizating radiations on the nervous system
Effects of irradiation in the embryonic and early postnatal periods on the functioning of the central nervous system
Ionizing radiation as a stimulus to the central nervous system
Effects of irradiation on nervous regulation of autonomic functions and tissue trophics
Effects of irradiation on cerebral blood circulation and the permeability of the hematoencephalic barrier
Intravitam investigation of certain elementary reactions of the central nervous system to radiation
Relation of radiation-induced reactions of the central nervous system to dosage, time factor, and prior irradiations.

Shabadash, A. L. and Kheifets, Yu. B.
CYTOCHEMISTRY OF BLOOD GLYCOGEN IN MAMMALS AFTER SINGLE WHOLE-BODY X-IRRADIATION. 1 Apr 63 [21]p. 16 refs. JPRS: 18479.
Order from OTS $0.50 63-21470

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 12, p. 29-35.

DESCRIPTORS: Cytochemistry, *Blood, *Mammals, X-rays, *Radiation effects, *Glycogen, Blood cells, Eosinophils, Leukocytes.

Single whole-body x-irradiation of rate with 800 r results after 10-30 minutes in a loss of glycogen by the neutrophils and thrombocytes. The decrease in glycogen content is at a maximum 1-3 hours after exposure against a background of marked leukocytosis and neutrophilosis. Unlike temporary variations in the normal polysaccharide level, disintegration once begun is uncontrollable. Disintegration of the polysaccharide progresses from the central. circumnuclear zones to the periphery of the cells. Six hours after irradiation the peripheral blood is found to contain many destroyed neutrophils with only traces of glycogen. After 24 hours there is a pronounced leukopenia, despite the development of new generations of cells with moderately high glycogen content approximating the normal. Cytochemical impairment of glycogen metabolism caused by irradiation precedes morphologically apparent injury to neutrophil nuclei and cytoplasm. (Author)

Shvedov, V. P. and Shirokov, S. I., eds.
RADIOACTIVE CONTAMINATION OF THE ENVIRONMENT: [SELECTED PARTS]. 27 May 63, 28p. JPRS: 19407.
Order from OTS $0.75 63-21916

Trans. of mono. Radioaktivnye Zagryazneniya Vneshnei Sredy, Moscow, 1962, p. 243-253, 273-275.

DESCRIPTORS: *Radiological contamination, Radiobiology, *Food, Contamination, *Fission products, Milk, Water, Cereals, Radioactivity, *Atmosphere, Radioactive fallout.

Contents:
Chap. 13. Content and distribution of radioactive substances in food products
Table of contents.

Tarusov, B. N.
PRIMARY PROCESSES OF RADIATION INJURY: CONTENTS, EXCERPTS ON RADIOSENSITIVITY, CONCLUSIONS. 23 May 63, 28p. 22 refs. JPR: 19363.
Order from OTS $0.75 63-21900

Trans. of mono. Pervichnye Protsessy Luchevogo Porazheniya, Moscow, 1963, p. 2, 85-96.

DESCRIPTORS: *Radiation injuries, *Adaptation (Physiology), Radiochemistry, Cells (Biology), Tissues (Biology), *Sensitivity, Radiation effects, Body temperature, *Oxidation-reduction reactions, Radiation sickness.

Surgery

Komarov, A. S. and Kotomina, S. I.
CHEMICAL BURNS OF THE STOMACH AND THEIR TREATMENT. 24 May 63, 10p. 22 refs. JPRS: 19406.
Order from OTS $0.50 63-21915

Trans. of Sovetskaya Meditsina (USSR) 1962, v. 26, no. 12, p. 13-16.

DESCRIPTORS: Chemicals, *Burns, Therapy, *Stomach, Surgery, *Excision.

Chemical burns of the stomach, more frequently in the distal section, require operative treatment. At the contemporary condition of the development of surgery, resection of the stomach must be the operation chosen. In vast burns of the stomach a total gastrectomy is indicated. Determination of the time of operative intervention must be made by individual, corresponding to the clinical illness. (Author)

Gul'yants, E. S.
COMBINED UTERINE AND MULTIPLE ECTOPIC PREGNANCIES OF DIFFERENT PERIODS. [1962] [3]p. FASEB manuscript no. S 93-2.
Order from OTS or SLA $1.10 63-15984

Trans. of Akusherstvo i Ginekologiya (USSR) 1962 [v. 38] no. 1, p. 106-107.

DESCRIPTORS: *Pregnancy, *Reproductive system, Surgery, *Excision.

A Case History

Zoology

FISHING [ECONOMY] 1962 [VOL. 38] NO. 6: [SELECTED] TRANSLATIONS. 5 June 63, 24p. JPRS: 19562.
Order from OTS $0.75 63-21982

Trans. of Rybnoe Khozyaistvo (USSR) 1962 [v. 38] no. 6, p. 3-7, 15-23.

DESCRIPTORS: *Fisheries, *Fishes, *Automation, *Oceans, Atlantic Ocean, Distribution, Growth.

Contents:
Comprehensive mechanization and automation: the main line of development of the fishing industry
World oceanic fishing resources, by G. V. Martinsen
New fishing objects: South Atlantic sardine, by S. M. Overko.

ZOOLOGICAL JOURNALS, 1963, VOL. 42, NO. 3: [SELECTED] ARTICLES. 29 May 63, 21p. 25 refs. JPRS: 19487.
Order from OTS $0.75 63-21955

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 3, p. 338-344, 473-475, 477-478.

DESCRIPTORS: *Animals, *Biology, *Trichinosis, Arctic regions, Black Sea, Preservation, Public health, Minerals, Plants (Botany).

Contents:
The natural focus of trichinosis in the Arctic, by G. G. Smirnov
The Caspian fauna in the Azov-Black Sea basin (Kaspiiskaya Fauna v Azovo-Chernomorskom Bassene, by F. D. Mordukhai-Boltovskii, 1960: review by L. A. Zenkevich
All-Union Conference on the Conservation of Nature (no. 5) Kishinev, 1962, by V. S. Pokrovskii.

Brodskii, K. A. and Baskakov, G. A.
A MORE RAPID METHOD OF DETERMINATION IN THE TREATMENT OF ZOOPLANKTON (uskorennyi Schetnyi Metod Obrabotki Zooplanktona). 1963, 13p. PL-480 Int.
Order from OTS $0.50 61-31035

Trans. of Vsesoyuznoe Gidrobiologicheskoe Obshchestvo. Trudy (USSR) 1951, v. 3, p. 227-238.

DESCRIPTORS: *Plankton, *Aquatic animals, Marine biology, Determination, Oceanographic data, Nomographs, *Counting methods.

Dubinin, V. B. and Dubinin, M. N.
PARASITOFAUNA OF MAMMALS OF THE DAURIAN STEPPES: THE FAMILY HELEIDAE (= CERATOPOGONIDAE) [Parazitofauna Mlekopitayushchikh Daurskoi Stepi: Mokretsy sem. Heleidae (= Ceratopogonidae)] tr. by R. Ericson. 27 May 60, 2p. (tables omitted).
Order from OTS or SLA $1.10 62-15635

Partial trans. (p. 149-150) of [Materialy k Poznaniyu Fauny i Flory SSSR. Novaya Seriya. Otdel Zoologicheskii] 1951, v. 22(37) Mater[ialy] po Gryzun[am] no. 4, p. 98-156.

DESCRIPTORS: *Mammals, *Parasites, *Insects, *Diptera, *Midges, Disease vectors.

Evropeitseva, N. V.
CORRELATION BETWEEN THE PROCESSES OF EARLY GONAD RIPENING, AND TRANSFORMATION TO THE SEAWARD-MIGRATING STAGE, AMONG MALE BALTIC SALMON (SALMO SALAR) L.) HELD IN PONDS (Sootnoshenie Protsessov Rannego Razvitiya Gonad i Perekhod v Pokatnoe Sostoyanie u Samtsov Baltiiskogo Lososya (Salmo salar L.) v Prudovykh Usloviyakh tr. by G. N. Kulikovskii. 1963 [6]p. (figs. omitted) 9 refs. FRBC Trans. Series no. 430.
Order from NRCC NRCC C-4385

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, no. 5, p. 777-779.

DESCRIPTORS: *Sex glands, Growth, *Salmon, Fishes, Baltic Sea, Aquatic animals, Marine biology.

Gavrilov, G. B.
ON THE FORMATION OF BENTHAL FAUNA IN ARTIFICIAL RESEVOIRS AND ON SOME PROBLEMS OF THE EVOLUTIONARY THEORY CORRELATED WITH THIS PROCESS (O Formirovanii Donnoi Fauny Iskusstvennykh Vodokhranilishch i o Nekotorykh Voprosakh Evolyutsionnoi Teorii, Svyazannyh s Etim Protsessom). 26 Dec 62, 18p. (fig. omitted) 24 refs. Trans. A-1384.
Order from OTS or SLA $1.60 63-15467

Trans. of Zhurnal Obshchei Biologii (USSR) 1961, v. 22, no. 3, p. 233-240.

DESCRIPTORS: *Benthos, *Aquatic animals, Ecology, *Evolution, Genetics, Marine biology, *Lakes, Adaptation (Physiology)

Selection of benthal fauna which has been used to populate reservoirs occurs spontaneously (independently of the will of man). Those more adapted to the newly created conditions remain within the composition of the fauna. The rest are either eliminated or are poorly represented. The best predominate. In a number of reservoirs of the USSR—these include the larvae of Tendipedidae (of Diptera insects), oligo-chaetes and sometimes mollusks. This phenomenon is defined as "noncontrolled bioanthropic selection". Adaptation by the representative of benthal fauna settled in new reservoirs which are entirely new habitats for the fauna, must unavoidably cause ecological divergences which, in turn, determine a physiological modification and, then, also morphological changes. Hence, it is entirely admissible to expect accelerated processes of morphological evolution to take place in reservoirs. (Author)

Harangy, L. von.
MUSSEL POISONING AS A BIOLOGICAL PROBLEM ON THE BASIS OF RECENT RESEARCH ON ITS CAUSES (Die Muschelvergiftung als Biologisches Problem auf Grund der Neueren Diesbezüglichen Ursachenforschung) tr. by J. Flury. 1962 [9]p. 105 refs. FRBC Trans. Series no. 379.
Order from NRCC NRCC C-4251

Summary trans. (p. 350-351) of Helgoländer Wissenschaftliche Meersuntersuchungen (Germany) 1942, v. 2, no. 3, p. 279-353.

DESCRIPTORS: *Pelecypoda, Mollusca, Marine biology, Toxicity, Bacteria, Etiology, Morphology, *Mussel poisoning.

Kaganovskaya, S. M.
DATA FOR A BIOLOGICAL STUDY OF THE ALASKA POLLACK (THERAGRA CHALCOGRAMMA (PALL.)). 1961 [17]p. (figs. omitted) 17 refs. [DSIR NLL] M. 3787
Order from OTS or SLA $1.60 63-19734

Trans. of [Tikhookeanskii Nauchno-Issledovatel'skii Institut Rybnogo Khozyaistva i Okeanografii. Izvestiya] (USSR) 1950, v. 32, p. 103-119.

DESCRIPTORS: Biology, *Fishes, Marine biology, *Taxonomy

From 1946 to 1948 the Pacific Institute of Fisheries and Oceanography conducted an investigation into the biology and distribution of the Alaska pollack (Theragra chalcogramma (Pall.)) in the Gulfs of Korea and Petra Velikogo (Gulf of Peter the Great off Vladivostock). The data obtained, together with some small collections made along the eastern coast of Sakhalin (Mordvinova Gulf) and data from the archives of the Institute, serve as the material for preparation of the present work. (Author)

Parin, N. V.
THE FLYING FISHES (EXOCOETIDAE) OF THE NORTHWEST PACIFIC (Letuchie Ryby (Exocoetidae) Severo-Zapadnoi Chasti Tikhogo Okeana). 1963, 84p. 95 refs. PL-480 Int.
Order from OTS $1.00 61-31031

Trans. of Akademiya Nauk SSSR. Institut Okeanologii. Trudy, 1960, v. 31, p. 205-285.

DESCRIPTORS: *Fishes, *Taxonomy, Pacific Ocean, Geography, Distribution, Marine biology.

Topics include: A taxonomic review of the flying fishes of the Northwest Pacific; key to the genera of the family Exocoetidae; taxonomic data on members of the general Oxyporhamphus Gill, Parexocoetus Bleeker, Exocoetus Linne, Cypselurus Swainson, and Prognichthys Breder; geographical distribution of the flying fishes; and, some biological features of the flying fishes.

Stark, I. N.
NEREIS SUCCINEA IN THE SEA OF AZOV [Nereis Succinea v Azovskom Morya] tr. by V. Pahn. 1961, 21p. 12 refs.
Order from OTS or SLA $2.60 63-15149

Trans. of Zoologicheskii Zhurnal (USSR) 1959, v. 38, no. 11, p. 1634-1648.

DESCRIPTORS: *Fishes, *Benthos, Marine biology, Ocean bottom, *Food, Oceanography.

In the paper presented there is discussed the question on the role of nereids in the Sea of Azov and their relationships with the other representatives of the benthos. Nereis succinea makes from 0.22 to 2.32 g per 1 m^2 of the bottom in various seasons. In relation to the small biomass and low population density it takes a subordinate position in the benthos of the Sea of Azov. Annual and seasonal population dynamics of nereids are due to the character of hydrometeorological and hydrochemical conditions. The leading factor is the flow from the continent which determines the state of the bottom, its food supply, salinity etc. No adverse effect of nereids upon other benthal representatives is observed in the Sea of Azov. Nereis is the most valuable food of many mass fishes-benthophages. (Author)

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 196 (CHEMISTRY SERIES). 5 June 63, 6p. JPRS: 19578.
Order from OTS $0.50 63-21993

Abstract trans. of Revista de Chimie (Rumania) 1963, v. 14, no. 3, p. 123-167, 173.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Physical chemistry, *Chemical engineering, *Radiochemistry, Pyrolysis, Phosphates, Towers (Chemistry), Sulfamic acids, Atomic structure, Decontamination, Selenium, Tellurium, Acetates, Labelled substances, Iodine.

HUNGARIAN CHEMISTS VISIT BLOC CHEMICAL INSTITUTIONS. 3 June 63, 37p. 22 refs. JPRS: 19533.
Order from OTS $1.00 63-21972

Trans. of Magyar Tudomanyos Akademia Kemiai Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1963, v. 19, no. 1, p. 83-85, 107-129.

DESCRIPTORS: *Scientific personnel, *Chemists, *Hungary, *Scientific research, *Chemistry, *Reports, *Czechoslovakia, *East Germany.

Contents:

Report on a study tour to Czechoslovakia, by Sandor Batioz

Report on a study tour to the German Democratic Republic, by Gyorgyne Kliment

Report on a study tour to Leningrad, by Rezsone Moldvai

Report on a study tour to the German Democratic Republic, by Geza Schai.

Arzumanov, A. O.
THE LACK OF FOUNDATION FOR THE THEORY OF COVALENT CHEMICAL BONDING [AND] LETTERS TO THE EDITOR (Nesostoyatel'nost' Kovalentnoi Teorii Khimicheskoi Svyazi). 1963, 9p. 11 refs. PL-480 Comm.
Order from OTS $0.50 63-11186

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1962, v. 5, no. 4, p. 675-680.

DESCRIPTORS: Molecular structure, *Chemical bonds, Theory, Atomic orbitals, Valence, Magnetic fields, *Germanium compounds, Hydroxides, Solubility.

The data discussed demonstrate that the theory of covalent bonding is totally unfounded. A simple chemical bond should be regarded as being of the same homoheteropolar type in all compounds; in limiting cases the node (absence) of the heteropolar component of the bond coincides with the antinode (maximum) of the homopolar (magnetic) forces. (Arzumanov) The letters included are entitled: (1) In connection with the paper by P. N. Kovalenko and L. B. Reznik "The determination of the pH of incipient dissolution and the activity product of germanium (IV) hydroxide." (2) The Solubility of Germanium Dioxide.

Fischer, Ernst Otto and others.
ON THE AROMATIC COMPLEXES OF METALS. XXXI. A SYNTHESIS FOR CHROMIUM HEXACARBONYL. 31 Jan 61, 4p. 9 refs.
Order from SLA $1.10 63-14225

Trans. of Chemische Berichte (West Germany) 1959, v. 92, p. 3050-3052.

DESCRIPTORS: *Complex compounds, Metalorganic compounds, *Chromium compounds, *Carbonyl radicals, Synthesis.

A synthesis of chromium hexacarbonyl in an autoclave which can be carried out very simply and with excellent yield even with large lots, by the reaction: $CrCl_3 + Al + 6\ CO \xrightarrow[C_6H_6]{AlCl_3} Cr(CO)_6 + AlCl_3$, is reported. It runs through the intermediate step of an aromatic complex. (Author) (See also 59-16520)

Shakhnovskii, L. N.
THE INFLUENCE OF AMMONIA ON THE SENSORY STRENGTH OF SMOKING PRODUCTS (Vliyanie Ammyaka na Vkusovuyu Krepost' Kuritel'nykh Izdelii). Apr 63 [9]p. 5 refs. RTS-2016.
Order from OTS or SLA $1.10 63-15958

Trans. of Tabak (USSR) 1954, v. 15, no. 3, p. 40-44. Another trans. is available from K-H $10.00 as K-H-3439-b [1962] 8p.

DESCRIPTORS: *Ammonia, *Taste, *Tobacco, Cigarettes, Nicotine, Smokes.

Ammonia itself is not the vehicle of the properties of sensory strength, but as a result of its ability partially to displace nicotine and its accompanying alkaloids from their salts, can exercise a strong, although indirect, effect on the sensory strength of smoke. As a result of hydrolysis, ammonium carbonate exercises an effect analogous to that of ammonia on sensory strength. Ammonium bicarbonate has no effect on the sensory strength of smoke. On the basis of these propositions and of the fact that the acid complex of smoke (including CO_2) predominates significantly in a molar relationship over the base complex, it is concluded that the base composition of smoke is in salt form and that ammonia is present mainly in the form of bicarbonate, which explains its failure to influence sensory strength. (Author)

Analytical Chemistry

Aleskovskii, V. B. and Tsyplyatnikov, G. P.
PROCESS FOR DETERMINING THE CONTENT OF FLUORINE AND ADMIXTURES (HF, CO_2, O_2 AND INERT RESIDUE) IN TECHNICAL FLUORINE, tr. by J. B. 6 Mar 63, 4p.
Order from OTS or SLA $1.10 63-19072

Trans. of USSR Author's certificate 123,752, cl. 42/1, 3/09, appl. 28 Jan 59 (pub. in #Byulleten' Izobretenii (USSR) 1959, no. 21).

DESCRIPTORS: *Fluorine, Mixtures, *Hydrogen compounds, Fluorides, *Carbon dioxide, *Oxygen, Chemical analysis, *Gas analysis, Chlorine, Measurement, *Adsorbents, Sodium compounds, Salts, Benzenes, Alcohols.

The invention involves a process for determining the content of fluorine and admixtures (HF, CO_2, O_2 and inert residue) in technical fluorine, characterized in that, in order to accelerate the analysis, to achieve complete absorption of HF and to eliminate the possibility of formation of HF from fluorine and water, the solid phase substitution reaction between the analyzed fluorine and sodium chloride with absorption of HF as a result of formation of acid salt $NaHF_2$ is performed under static conditions. (Author)

Babkin, R. L. and Epeikina, K. P.
DETERMINATION OF DISSOLVED OXYGEN IN WATER. [1962] [12]p. 4 refs. C. E. Trans. 2613; [DSIR] NLL M. 8893.
Order from OTS or SLA $1.60 63-15195

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 2, p. 48-54.

DESCRIPTORS: *Oxygen, *Water, Determination, *Chemical indicators, Dyes, Colorimetric analysis.

New variants of the indigocarmine method for the determination of dissolved oxygen in water are described. (Author)

Batalov, A. P. and Korshunov, I. A.
RADICAL EXCHANGE IN ORGANOMETALLIC COMPOUNDS. VI. A NEW METHOD FOR DETERMINING THE COMPOSITION OF COMPLEXES OF ALUMINUM TRIETHYL WITH SOME ORGANIC SOLVENTS.
14 June 62 [8]p. 7 refs.
Order from OTS or SLA $1.10 63-10805

Trans. of Trudy po Khim[ii] i Khim[icheskoi] Tekhnol-[ogii] (USSR) 1960 [v. 3] no. 3, p. 501-504.

DESCRIPTORS: *Metalorganic compounds, *Exchange reactions, *Complex compounds, *Ziegler catalysts, *Aluminum compounds, *Ethyl radicals, Chemical analysis, *Organic solvents, Ethyl ethers, Pyridines, Ethylenes, Dioxides, Heterocyclic compounds.

A new method is proposed for determining the composition of complexes of aluminum triethyl with oxygen and nitrogen-containing solvents. The composition of the complexes of aluminum triethyl with diethyl ether, pyridine and dioxane was determined by the proposed method. (Author)

Büchel, E.
COULOMETRIC TITRATION APPARATUS FOR THE DETERMINATION OF CARBON AND SULPHUR IN METALS IN THE COMBUSTION METHOD. May 63.
Order from BISI 21 5s BISI-3220

Trans. from mono. International Year Book of Chemical Industries, n. p., 1962/63.

DESCRIPTORS: Measuring devices (Electrical and electronic), Volumetric analysis, *Carbon, *Sulfur, Metals, *Combustion.

Budesinsky, B.
SPECTROPHOTOMETRIC STUDY OF THE REACTION OF URANIUM(VI) AND IRON(III) WITH XYLENOL-ORANGE: RAPID DETERMINATION OF TRACES OF IRON IN URANIUM. [1962] 7p. (figs. omitted) 7 refs.
Order from SLA $1.10 62-20439

Trans. of Z[eitschrift] für Anal[ytische] Chem[ie] (West Germany) 1962, v. 188, no. 4, p. 266-272.

DESCRIPTORS: *Uranium, *Iron, Chemical reactions, Spectrographic analysis, *Phenols, *Methyl radicals, *Tracer studies, Chemical analysis. Spectrophotometers, *Dyes.

The formation conditions of the complex of UO_2^{2+} and Fe^{3+} with xylenolorange were found, the composition of the resulting complex determined, and the stability constant calculated. On the basis of the observed results the general uniformity of the conflicting reaction of the complex UO_2^{2+} and Fe^{3+} was determined and the conditions of the determination of iron in uranium was set. The experimental results fully confirmed the theoretical assumption. (Author)

Decker, P. and Höller, H.
A TIME GRADIENT METHOD FOR THE FRACTIONATION OF GRANULAR MATERIALS, PARTICULARLY ION EXCHANGE RESINS, THROUGH SEDIMENTATION [Ein Zeitgradientenverfahren zur Fraktionierung von Körnigen Materialen, Insbesondere Ionenaustauscherharzen, durch Sedimentation] [1963] [20]p. (foreign text included) 6 refs.
Order from SLA $1.60 63-14378

Trans. of Journal of Chromatography (Netherlands) 1962, v. 7, no. 3, p. 392-399.

DESCRIPTORS: *Fractionation, Powders, Materials, *Ion exchange resins, *Sedimentation, Amino acids, Separation, Chromatographic analysis.

A simple sedimentation procedure, called "time gradient method", is described, which permits a fractionation of granular materials, e.g. ion exchange resins, into fractions of defined ranges. The fractionation involves repeated decantation using a series of sedimentation beakers. Starting with the last beaker (the supernatant of which is discarded), the unsedimented contents of each beaker are decanted into the following vessel of the series. The first beaker is subsequently refilled with distilled water. The sedimentation time in a given beaker is kept constant throughout the procedure, but this time is increased in every following beaker (time gradient). A geometric or quadratic progression of sedimentation times has proved advantageous. Using a quadratic time gradient (2-20 min) and 1-l beakers, a 150 ml sample of Dowex 50X8 with a mean particle diameter of 56 ± 16 μ was separated into a series of fractions of linearly decreasing diameters ranging from 70 μ to 25 μ with deviations of ± 5-10 u. (Author)

Duval, Clement and Morette, Andre.
GRAVIMETRIC ANALYSIS OF VANADIUM. CRITICAL STUDY OF THE THERMOLYSIS OF THE PRECIPITATE USED. [1963] 3p. 7 refs.
Order from SLA $1.10 63-14142

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1950, v. 230, p. 545-547 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Vanadium, *Gravimetric analysis, Chemical precipation, Precipitates, Pyrolysis.

Fischer, W., Bastius, H., and Mehlhorn, R.
A NEW RAPID METHOD FOR THE COLORIMETRIC DETERMINATION OF SULPHUR IN METALS.
May 63.
Order from BISI £2 15s BISI-3204

Trans. of Neue Hütte (East Germany) 1963, v. 8 [no. 1] p. 35-39.

DESCRIPTORS: *Colorimetric analysis, *Sulfur, *Metals, Purification, Combustion, Absorption, Photometers, Metallurgy.

Gander, K. F.
PAPERCHROMATOGRAPHIC DETERMINATION OF ANTIOXIDANTS. [1963] 9p. 6 refs.
Available on loan from SLA 63-14784

Trans. of Fette, Seifen, Anstrichmittel (West Germany) [1955] v. 57, no. 6, p. 423-425.

DESCRIPTORS: *Fats, *Antioxidants, Ethyl radicals, Butyl radicals, Propyl radicals, Gallium compounds, Salts, Acids, Alkoxy radicals, Benzenes, Quercetin, Sodium palmitate, Fatty acid esters, Tocopherols, Chromatographic analysis, *Paper chromatography, Reagents, Sprays, Alcohols, Silver compounds, Nitrates, Quinones, Amides, Chlorides.

Gnauck, G.
GAS CHROMATOGRAPHIC ANALYSIS OF PERMANENT GASES WITH IONISATION DETECTORS. [1963]. BGIRA/Tr/63/18; no. 551.
Order from BGIRA BGIRA-551

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1962, v. 189, no. 1, p. 124-130.

DESCRIPTORS: *Gas chromatography, *Gas analysis, *Chromatographic analysis, Ionization, Detection, Gases.

Gonzalez Carrero, J.
THE DIFFERENT FRACTIONS OF SOLUBLE SILICA AND THEIR QUANTITATIVE DETERMINATION. [1963] 13p.
Order from ATS $15.85 ATS-44Q68SP

Trans. of Soc[iedad] Espan[ola de] Fis[ica y] Quim[ica]. Anales, 1958, v. 54B, p. 677-688.

DESCRIPTORS: *Silicon compounds, *Dioxides, Solubility, Quantitative analysis.

Gordievskii, A. V. and Ustyugov, G. P.
PHOTOMETRIC DETERMINATION OF BORON IN MAGNESIUM ALLOYS. [1963] 5p.
Order from ATS $6.50 ATS-85Q69R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1961, v. 4, no. 3, p. 366-369.

DESCRIPTORS: *Boron, *Magnesium alloys, *Photometers.

Klimova, V. A. and Zabrodina, K. S.
MICRO DETERMINATION OF CARBONYL GROUPS BY OXIMATION. 30 May 62, 8p. 5 refs. [Trans] T.1403; [DSIR] NLL M 8925.
Order from OTS or SLA $1.10 63-15182

Trans. of #Zhurnal Analiticheskoi Khimii (USSR) 1960, v. 15, no. 6, p. 726-730.

DESCRIPTORS: *Microanalysis, *Carbonyl radicals, Amines, Hydroxides, *Oximes, Chlorides, Hydrogen compounds, Titration, Statistical data.

A method is developed for the micro determination of carbonyl compounds by oximation with hydroxylamine hydrochloride in the presence of tri-ethanolamine. The method may be applied to the determination of carbonyl groups in aldehydes, ketones, keto acids, esters of keto acids and also diketones and quinones capable of forming dioximes. It is shown that carbonyl compounds may be determined in the presence of organic acids which only undergo little dissociation. (Author)

Neiman, M. B. and Shushunov, V. A.
KINETIC METHOD OF PHYSICAL CHEMICAL ANALYSIS. II. KINETICS OF REACTION OF Sn-Na ALLOYS WITH EtBr VAPORS [Kineticheskii Metod Fiziko-Khimicheskogo Analiza. II. Kinetika Reaktsii Olovianno-Natrievykh Splavov s Parami Bromistogo Etila]. 8 Mar 49 [26]p. 11 refs.
Order from OTS or SLA $2.60 63-10977

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22 [no. 2] p. 145-155.
Another trans. is available from SLA as RT-3924, 30p

DESCRIPTORS: *Tin alloys, *Sodium alloys, Ethyl radicals, *Bromides, Vapors, Reaction kinetics, *Intermetallic compounds, *Chemical analysis, Sodium compounds, *Stannides, *Metalorganic compounds, Tin compounds, Ethanes.

In the investigation of kinetics of the reaction of Sn-Na alloys with EtBr vapor in wide range of temperature and pressure the existence of the intermetallic compounds NaSn and $NaSn_2$ was shown by kinetic methods. $SnEt_3$ is formed from the alloy NaSn. The reaction is characterized by clearly expressed induction periods. $SnEt_4$ is formed from $NaSn_2$ at low temperatures while $SnEt_2Br_2$ is formed at high temperatures. The mechanics explaining details of the reaction are given. (Author)

Rocchietta, S.
RECENT STUDIES ON THE IDENTIFICATION OF 3,4-BENZOPYRENE AMONG THE COMPONENTS OF TOBACCO SMOKE. [1962] 3p,
Order from K-H $3.75 K-H 6405b

Trans. of Minerva Medica (Italy) 1956 [v. 47] p. 1831.

DESCRIPTORS: Chemical analysis, *Benzopyrenes, *Tobacco, *Smokes, Cigarettes

Runge, H.
GAS CHROMATOGRAPHY ANALYSIS OF INORGANIC GASES. [May 63].
Order from BGIRA BGIRA-563

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1962 [v. 189] no. 1, p. 111-124. Another trans. is available from SLA $1.60 as 62-18999, 28 Aug 62 [17]p.

DESCRIPTORS: *Gas chromatography, *Gases, *Chromatographic analysis.

For abstract see Technical Translations 9: 995, 1963.

Trabert, Heinz.
A NEW METHOD FOR THE DETERMINATION OF INDIVIDUAL ALKALOIDS IN ALKALOID MIXTURES. [1962] 4p.
Order from K-H $5.00 K-H 9061 c

Trans. of der Naturwissenschaften (West Germany) 1956, v. 43 [no. 15] p. 351.

DESCRIPTORS: Chemical analysis, *Alkaloids, Mixtures, Separation.

Tyman, V.
THE DETERMINATION OF MOISTURE CONTENT IN SOLID FUELS: FISCHER'S METHOD (Stanoveni Vihkosti Pevnych Paliv Fischerovou Metodou). [1962] [10]p. 12 refs.
Order from SLA $1.10 62-10965

Trans. of Ustav pro Vyzkum a Vyuziti Paliv. Prace (Czechoslovakia) 1959, v. 10, p. 293-303.

DESCRIPTORS: Solids, Fuels, *Coal, Volumetric analysis, *Moisture.

Vasak, Vladimir and Sedivec, Vaclav.
THE COLORIMETRIC DETERMINATION OF ARSENIC (Kolorimetricke Stanoveni Arsenu). [1963] [15]p. 18 refs.
Available on loan from SLA 63-14815

Trans. of Chem[icke] Listy (Czechoslovakia) 1952, v. 46, p. 341-344.
Another trans. is available from SLA as 58-00079.

DESCRIPTORS: *Arsenic, Colorimetric analysis, Reagents, *Silver compounds, Ethyl radicals, Thio radicals, *Carbamates, Solvents, Pyridines.

A description of a colorimetric method for the detection and quantitative determination of arsenic, based on the reaction of arsenic hydride with silver diethyl-dithio carbamate in a pyridine solution. (Author)

Wada, Izaburo and Ishii, Raizo.
DETERMINATION METHOD FOR METALLIC ZIRCONIUM AND CHEMICALLY COMPOUNDED ZIRCONIUM IN COMMERCIAL METALLIC ZIRCONIUM AND FERRO-ZIRCONIUM. [1963] [5]p. 1 ref.
Order from SLA $1.10 63-14437

Trans. of [Rikagaku Kenkyujo Hokoku (Japan) 1943] v. 22, no. 1, p. 112-114.

DESCRIPTORS: *Zirconium, *Zirconium compounds, Metals, Oxides, Sampling, Chemical analysis, Iron compounds

Wada, Toshiyuki and Sumi, Midzuho.
STUDIES ON THE ISOLATION OF NICOTINE FROM WASTE TOBACCO. [1962] 21p.
Order from K-H $26.25 K-H 5525 f

Trans. of [Rikagaku Kenkyujo Hokoku] (Japan) 1932, no. 2, p. 124-134.

DESCRIPTORS: Separation, *Nicotine, Tobacco, *Wastes (Industrial).

Inorganic Chemistry

Parravano, N. and Montoro, V.
ALUMINA BLANC [NOTE 1] [1962] 2p. (figs. omitted). 1 ref.
Order from SLA $1.10 63-10427

Partial trans. of p. 885-886 of Accademia Nazionale dei Lincei. [Classe di Scienze, Fisiche, Matematiche e Naturali. Rendiconti] 1928, ser. 6, v. 7, p. 885-[891].

DESCRIPTORS: *Aluminum compounds, *Oxides, Chlorides, *Adsorption, Heating, Gels.

Rosolovskii, V. Ya.
THERMAL DECOMPOSITION OF NITROSYL PERCHLORATE. 18 Mar 63 [7]p. 6 refs.
FTD-TT-63-116; AD-401 739.
Order from OTS or SLA $1.10 63-19195

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 1, p. 115-117.

DESCRIPTORS: *Nitrogen compounds, *Perchlorates, Pyrolysis, Stability, Reaction kinetics.

It is shown that the thermal decomposition of nitrosyl perchlorate proceeds in two stages with an intermediate formation of nitronium perchlorate, which is more stable than nitrosyl perchlorate.

Schafer, Harald and Dohmann, Kurt-Dietrich.
CHEMISTRY OF [THE ELEMENTS] NIOBIUM AND TANTALUM. XXI. PREPARATIVE STUDIES WITH LOWER NIOBIUM CHLORIDES. 26 Oct 60, 33p. (figs. omitted) 69 refs.
Order from SLA $3.60 63-14134

Trans. of Zeitschrift für Anorganische und Allgemeine Chem[ie] (East Germany) 1959, v. 300, no. 1/2, p. 1-32.

DESCRIPTORS: Niobium, Tantalum, *Niobium compounds, *Chlorides, Pyrolysis, Phase studies, Chemical properties, Reduction (Chemistry)

Niobium trichloride has a wide range of homogeneity. The phase boundaries lie at compositions $NbCl_{3.1}$ and $NbCl_{2.67}$. These boundary compositions occur in the thermic decomposition of niobium tetrachloride and in the reduction of $NbCl_5$ with hydrogen. Experiments show further decomposition in which by a chemical transfer reaction, the trichloride phase $NbCl_x$ is recovered as a precipitate: $NbCl_x f + (4 \cdot x)NbCl_5 g = (5 \cdot x)NbCl_4 g$. The composition of the trichloride phase depends on the kind of $NbCl_5$ pressure applied. From the powder diagram and from the color of the trichloride preparation, the width of the trichloride phase and also the composition of the preparation lying within the homogeneous zone can be derived. Data on niobium trichloride as to its thermic and chemical behavior are given. Niobium (II) chloride is produced from Nb + $NbCl_{2.67}$. Also, upon heating Nb in a stream of $NbCl_5$ and argon, and by the reduction of $NbCl_5$ with H_2, the formation of $NbCl_2$ can be shown. $NbCl_2$ has not great width of zone. The chemical and thermic behavior of $NbCl_2$ are studied. Metallic niobium dissolves no demonstrable amount of Cl. No niobium(I) chloride was found. (Author) (See also 63-14132)

Schäfer, Harald and Dohmann, Kurt-Dietrich.
CONTRIBUTIONS TO THE CHEMISTRY OF THE ELEMENTS NIOBIUM AND TANTALUM. XXI. PREPARATIVE INVESTIGATIONS WITH THE LOWER NIOBIUM CHLORIDES. [1963] [38]p. (figs. omitted) 69 refs.
Available on loan from SLA 63-16505

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1959, v. 300, no. 1/2, p. 1-32. Another trans. is available from SLA $3.60 as 63-14134, 26 Oct 60, 33p.

DESCRIPTORS: Tantalium, Niobium, *Niobium compounds, *Chlorides, *Phase studies, Pyrolysis, Reduction (Chemistry), Thermochemistry, Solubility, Chemical analysis, Chemical properties, Synthesis (Chemistry).

Siebert, Hans.
PEROXYANTIMONATES. 5 Jan 61, 10p. 11 refs.
Order from SLA $1.10 63-10547

Trans. of [Zeitschrift für Anorganische Chemie] (East Germany) 1959, v. 301, p. 316-322.

DESCRIPTORS: *Potassium compounds, *Sodium compounds, *Antimonates, *Peroxides, Synthesis, Chemical properties, Spectra (Infrared), Chemical analysis

Peroxyantimonates are produced by treating solutions of potassium antimonates with H_2O_2. They are amorphous, difficultly soluble, polymeric substances. Among other things were isolated compounds of the approximate composition $KSbO_4 \cdot 1.7\ H_2O$, $NaSbO_4 \cdot 2\ H_2O$, $KSbO_4 \cdot 1.8\ H_2O_2$, and $K_2HSb_3O_{12} \cdot 3.5\ H_2O$. The composition of the peroxyantimonates is discussed with the aid of their infrared spectra. (Author)

Yakimov, M. A. and Nosova, H. F.
SOLUBILITY ISOTHERM OF THE SYSTEM $UO_2(NO_3)_2$-$Be(NO_3)_2$-H_2O at 25°, tr. by K. S. Warren. Oct 61, 4p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-4835

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1961, v. 6, no. [1] p. 208-211.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Uranyl radicals, Nitrates, Nitric acid, *Beryllium compounds, Water, Solubility.

Organic Chemistry

CHEMISTRY OF CELLULOSE: SELECTED ARTICLES. 1963, 32p. 45 refs. PL-480 Agr.
Order from OTS $0.50 63-11012

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 68, no. 5, p. 865-867; 1951, v. 78, no. 3, p. 481-483; Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1951, no. 6, p. 782-794; Bumazhnaya Promyshlennost' (USSR) 1953, v. 28, no. 1, p. 6-13.

DESCRIPTORS: *Cellulose chemistry, Cellulose, Oxidation, Molecular structure, *Ketones, *Oxycellulose, Chemical properties, Chemical bonds, Chemical analysis, *Lactones, Carbonyl radicals, Amines, Hydroxides.

Contents:
Ketonic groups in an oxidized cellulose molecule, by E. D. Kaverzneva
New data on the chemical composition of oxycelluloses, by E. D. Kaverzneva
The chemical transformations in the cellulose chain caused by the action of oxidants, by E. D. Kaverzneva and A. S. Salova
Chemical transformations in cellulose macromolecule brought about by the action of oxidizing agents, by E. D. Kaverzneva
Advances in cellulose oxidation research, by F. P. Komarov.

PROCESS FOR PREPARATION OF TYROSINE. [1963] 2p. 1 ref.
Order from OTS or SLA $1.10 63-14627

Trans. of [German] patent 1,013,494, by Chemodur G. m. b. h.

DESCRIPTORS: *Tyrosine, Preparation, *Silk, Boiling, Hydrochloric acid, Hydroxides, Sodium compounds, Cooling, Crystallization, Medicine.

The present invention has for an object a procedure for the preparation of tyrosine. One boils natural silk (dust, waste) for several hours with fuming HCl and after having eliminated the greater part of the HCl, one dissolves the mass in water, then filters the solution thus obtained and neutralizes it accurately with cooling by means of alkali, preferably with soda lye; one dissolves the precipitate formed on cooling in cold water and boils the solution in the presence of animal charcoal and filters, and crystals of pure tyrosine form in the solution placed in a cold spot. In a particular case one boils under reflux 300 cm^3 of fuming HCl with 100 grams of natural silk. (Author)

SERIES OF EXPERIMENTS ON REACTIONS OF SODIUM METHYLATE. [1962] 3p. 3 refs.
Order from SLA $1.10 63-10950

Trans. from unidentified mono., n.p., n.d.

DESCRIPTORS: *Sodium compounds, Methyl radicals, Esters, Chemical reactions, Sulfonates, Benzenes, Chlorocarbons, Copper catalysts.

Backer, H. J., Stevens, W., and Bij, J. R. Van der.
PINACOLS OF p-METHYL ACETOPHENON AND 3,4-DI-p-TOLYLTHIOPHENE SULFON. [1963] 9p. [figs. tables omitted] 14 refs.
Order from SLA $1.10 63-14121

Trans. of Recueil [des] Travaux Chim[iques des Pays-Bas] (Netherlands) 1940, v. 59, p. 1141-1155.

DESCRIPTORS: *Methyl radicals, *Ethyl radicals, *Glycols, *Acetophenones, *Bitolyls, *Thiophenes, *Sulfones, Crystallography, Reduction (Chemistry), Chemical reactions, Temperature, Molecular association, Oxidation, Hydrogenation

Reduction of 1-tolyl methylcetone (p-methyl acetophenone); crystallographic properties of pinacol 136-137°; reduction with the aid of aluminum and mercuric chloride; reduction with cupric (cuprous, copper-colored) zinc and acetic acid; preparation of pinacols with the help of magnesium compounds; reaction of diacetyl and p-tolylmagnesium bromide; reaction of p-tolil (di-p-tolyl-glyoxal) and methyl magnesium iodide; crystallographic properties of pinacol 135.5-135°; properties of pinacols obatined; examination of the 80-81° product (cetol); preparation of the cetol (1,2-di-p-tolyl propanone-1-ol-2); preparation of pinacols from cetol; molecular combination of pinacol 134.5 and the cetol; speed of oxidation of pinacols; the sulfons of 2.3-di-p-tolyl butadiene and 3.4-di-p-tolyl thiophene; dehydration of the pinacol and addition of sulfurous anhydride to the butadiene; and partial hydrogenation of the di-p-tolyl-thiophene sulfon.

Backer, H. J., Strating, J., and Kool, C. M. H.
SOME CYCLIC SULFONS FORMED BY THE ADDITION OF SULFUROUS ANHYDRIDE TO BUTADIENES. [1963] 6p. 12 refs.
Order from SLA $1.10 63-14120

Trans. of Recueil [des] Travaux Chim[iques des Pays-Bas] (Netherlands) 1939, v. 58, p. 778-784.

DESCRIPTORS: *Sulfones, *Sulfur compounds, *Dioxides, *Butadienes, Chemical reactions

Bresler, S. E., Osminskaya, A. T., and Popov, A. G.
THERMAL DEGRADATION OF STEREOREGULAR POLYPROPYLENE. [1963] 4p. 3 refs.
Order from OTS or SLA $1.10 63-14323

Trans. of Vysokomolekulyarnye Soed[ineniya] (USSR) 1960, v. 2 [no. 1] p. 130-132.
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-18426 [1960] 5p.

DESCRIPTORS: *Propenes, *Polymers, *Pyrolysis, Decomposition, Reaction kinetics, Low-pressure research, Stereochemistry.

For abstract see Technical Translations 5:112, 1961

Broz, James Malcolm.
IMPROVED POLYPROPYLENE COMPOSITIONS. [1963] 5p.
Order from ATS $8.50 ATS-87Q69F

Trans. of Belgian patent 619,716, priority based on pat. appl. filed 3 July 61, under series no. 121,385, in U.S.A.

DESCRIPTORS: *Propenes, Aliphatic compounds, Polymers

Galanina, R. S.
THERMIC CHLORINATION OF NORMAL HEXANE. [1963] 4p. 5 refs.
Order from OTS or SLA $1.10 63-14147

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 88 [no. 6] p. 983-986.

DESCRIPTORS: *Hexanes, *Chlorination, Substitution reactions, *Thermochemistry, Chlorocarbons, Synthesis.

Galanina, R. S.
THERMIC CHLORINATION OF STANDARD HEPTANE. [1963] 4p. 5 refs.
Order from OTS or SLA $1.10 63-14146

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 91 [no. 4] p. 829-832.

DESCRIPTORS: *Heptanes, *Chlorination, Substitution reactions, *Thermochemistry, Chlorocarbons, Synthesis.

Galanina, R. S. and Nekrasov, A. S.
ACTIVITY OF HYDROGEN ATOMS IN VARIOUS POSITIONS IN THE CHLORINATION OF STANDARD ALKANES C_6--C_9. [1963] 4p. (figs. omitted) 5 refs.
Order from OTS or SLA $1.10 63-14148

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1955, v. 100 [no. 4] p. 701-703.

DESCRIPTORS: *Hexanes, *Heptanes, *Octanes, *Nonanes, *Chlorination, Hydrogen, Substitution reactions, Molecular structure.

Grishina, O. N. and Sabirova, R. Z.
SYNTHESIS OF DICHLORIDES OF ALKYLPHOSPHONIC ACIDS FROM n-PARAFFINIC HYDROCARBONS BY THE METHOD OF OXIDATIVE PHOSPHONATION. [1963] 5p.
Order from ATS $7.50 ATS-81Q66R

Trans. of Neftekhimiya (USSR) 1961, v. 1, no. 6, p. 796-799.

DESCRIPTORS: *Hydrocarbons, *Phosphonic acids, *Alkyl radicals, *Chlorides, Synthesis.

Hasegawa, Masaki.
SYNTHESIS OF HIGH POLYMERIC SUBSTANCE FROM LIGNIN. [1962] 9p. 5 refs.
Order from SLA $1.10 63-10683

Trans. of [Sen'i Kogyo Shikensho Iho] (Japan) 1959, no. 48, p. 1-6.

DESCRIPTORS: *Lignin, Wood, Wood pulp, *Polymers, Synthesis, *Amides, Chemical reactions.

The purpose of the present study lies in the synthesis of bifunctional compounds from vanillin or vanillic acid and epichlorohydrin and the synthesis of high polymeric substances from the said compounds as a phase of the research into the utilization of vanillin which is obtained in large quantities from the pulp waste liquor. From the reaction, several kinds of new compounds which can be utilized for high polymeric substances were obtained. Two kinds of fiber-forming polyamide compounds were synthesized from the newly obtained compounds. (Author)

Jacobsen, Oscar.
MONOCHLOR METAXYLENE. [1963] 2p. (refs. omitted)
Order from SLA $1.10 63-14212

Trans. of [Chemische] Berichte (Germany) 1885, v. 18, p. 1760-1762.

DESCRIPTORS: *Chlorocarbons, *Xylenes, Synthesis, Salts, Sodium compounds, Amides, Chlorides.

Kamai, Gil'm and Khismatullina, L.
THE RESOLUTION OF ASYMMETRIC FOUR-COVALENT PHOSPHONIUM COMPOUNDS INTO OPTICALLY ACTIVE COMPONENTS (O Razdelenii Asimmetricheskikh Chetyrekhkovalentnykh Fosfonievykh Soedinenii na Opticheski Aktivnye Komponenty). Apr 63 [5]p. 7 refs. RTS-2227.
Order from OTS or SLA $1.10 63-19133

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 92, no. 1, p. 69-71.

DESCRIPTORS: *Phosphonium radicals, Chlorides, Pyrolysis, *Phosphines, Molecular rotation, *Stereochemistry.

Kargin, V. A., Sogolova, T. I., and Pavlichenko, N. P.
RELAXATION EFFECTS IN CRYSTALLINE POLYOLEFINS. [1963] 5p. 8 refs.
Order from OTS or SLA $1.10 63-14311

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4 [no. 5] p. 738-742.

DESCRIPTORS: *Polymers, *Ethylenes, *Propenes, *Relaxation time, Crystallization, Transition temperature, *Phase studies, Polyethylene plastics.

The relaxation properties of crystalline polyolefins were investigated over a wide range of temperatures under conditions of sinusoidal force action of constant amplitude. Under such conditions the crystalline polymers were found to possesss a broad relaxation spectrum over the entire interval from Tg to T_F. The importance of determining the character of the relaxation processes and the necessity of accounting for them in the use of articles from crystalline polymers is stressed. (Author)

Keier, N. P. and Astaf'ev, I. V.
CATALYTIC ACTIVITY OF ORGANIC POLYMERS. II. CATALYTIC PROPERTIES OF A POLYMER OBTAINED BY THE DEHYDROCHLORINATION OF POLYVINYLIDENE CHLORIDE. 22 Jan 63 [6]p. 3 refs. FTD-TT-62-1650; AD-298 220.
Order from OTS $0.50 63-11627

Unedited rough draft trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 3, p. 364-365.
Another trans. is available from ATS $4.50 as ATS-27P64R [1962] 3p.

DESCRIPTORS: *Catalysts, Polymers, *Polyvinyl chloride, *Formic acids, *Propanols, Dehydrogenation, *Hydrazines, Decomposition, Ammonia, Nitrogen, *Adsorbants.

The catalytic activity of a polymer obtained by the dehydrochlorination of polyvinylidene chloride was studied. Catalytic activity was detected in the decomposition of formic acid and isopropyl alcohol in the direction of dehydrogenation. Hydrazine undergoes 90% decomposition into ammonia and nitrogen. The polymer possesses high chemical adsorbability. (Author)

Ketzer and Osswald.
PREPARATION OF GLYOXYLIC ACID WITH SODIUM AMALGAM. [1963] 3p.
Order from SLA $1.10 63-10958

Trans. from unidentified mono., n.p., n.d.

DESCRIPTORS: *Glyoxylic acid, Synthesis, *Sodium alloys, Mercury alloys, *Electrochemistry.

Koch, Erwin.
DIBROME AND DICHLOR XYLENES, ESPECIALLY THE SUBSTITUTION (REARRANGEMENT) OF THE SYMMETRICAL COMPOUND CAUSED BY SULFURIC ACID. [1963] 4p.
Order from SLA $1.10 63-14213

Trans. of [Chemische] Berichte (Germany) 1890, v. 23, p. 2318-2321.

DESCRIPTORS: *Bromocarbons, *Chlorocarbons, *Xylenes, *Sulfuric acid, Chemical reactions.

Mathauser and Seifert.
PREPARATION OF POLYHYDROXYDIARYLS. 16 Sep 48, 6p. 10 refs.
Order from OTS or SLA $1.10 63-14280

Trans. of mono. [Über die Darstellung von Polyoxydiarylen, n.p., Apr 36, 6p.] (PB-75493).

DESCRIPTORS: *Dyes, Polymers, *Naphthyl radicals, *Hydroxides, Quinones, Synthesis.

Mayer, Fritz and Levis, Irene.
EFFECT OF O-CHLOR-BENZALDEHYDE ON CHLOR-SUBSTITUTED ANILINES, ON FLUORENE AND ON ANTHRAQUINONE AMINES. [1963] 10p. 9 refs.
Order from SLA $1.10 63-14215

Partial trans. (p. 1641-1650) of [Chemische] Berichte (Germany) 1919, v. 52, p. 1641-1652.

DESCRIPTORS: *Anilines, Chlorocarbons, *Fluorine, *Quinones, Anthracenes, *Amines, *Benzaldehydes, Chemical reactions, Azo radicals, Methyl radicals, Aldehydes, Synthesis.

Nakano, S.
POLYMERIZATION OF VINYL METHYL ETHER. [1963] 8p.
Order from ATS $9.00 ATS-21Q69J

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 204. p. 276-280.

DESCRIPTORS: *Vinyl radicals, Methyl ethers, *Polymerization.

Narita, Kozo.
THE SYNTHESIS OF L-ISOGLUTAMINE, tr. by E. R. Hope. May 63, 4p. 7 refs. DSIS T 79 J.
Order from NRCC NRCC C-4398

Trans. of [Nihon Kagaku Zasshi] (Japan) 1953, v. 74, no. 10, p. 832-834.

DESCRIPTORS: Synthesis (Chemistry), *Amino acids, *Glutamine, Glutamic acid, Anhydrides, Ethyl radicals, Esters, Hydrazine derivatives, Reagents, Ethanols, Methanols, Hydrazine hydrate, Hydrochloric acid, Glyoximes, Palladium catalysts, Nickel catalysts.

Pinkernelle.
NEW ANTIOXIDANTS FOR PRESERVATION OF FATS AND OILS. [1963] 6p.
Order from OTS or SLA $1.10 63-14299

Trans. of mono. [Über Neue Antioxydantien zur Konservierung von Fetten und Ölen (I. G. Farbenindustrie. Zetko Report) May 1940, 7p.] (PB-63229).

DESCRIPTORS: *Antioxidants, *Preservation, *Fats, *Oils, Odor, Taste, Colors, Food, *Esters, Synthesis, Propanes, Chlorocarbons, Bromocarbons, Chemical reactions, *Benzoic acids, Amines, Organic compounds Hydroxides, Alkyl radicals, *Gallic acid.

Pyriki, Constantin and Moldenhauer, Walter.
INFLUENCING CIGARETTE SMOKE BY TREATING TOBACCO WITH VARIOUS AGENTS. [1963] 9p.
Order from SLA $1.10 63-14368

Partial trans. (excerpts) of [Institut für Tabakforschung. Berichte (East Germany) 1960, v. 7, no. 2, p. 216-240]. A complete trans. is available from K-H $48.75 as K-H-10969-e [1962].

DESCRIPTORS: *Tobacco, *Cigarettes, Smokes, Nicotine, Taste, Additives, Carbohydrates.

Quelet, Raymond.
DERIVATIVES OF PARA-XYLYLENE GLYCOL. [1963] 16p. 16 refs.
Available on loan from SLA 63-14234

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1933, ser. 4, v. 53, p. 222-234.

DESCRIPTORS: *Xylenes, *Glycols, Ethyl ethers, Methyl radicals, Propyl radicals, Butyl radicals, Pentyl radicals, Benzyl radicals, Ethers, Oxides, Acetates, Aldehydes, Carbazones, Synthesis (Chemistry).

Runge, Franz.
ORGANO-METALLIC COMPOUNDS: ORGANIC SYNTHESES WITH THE HELP OF ORGANOMETALLIC COMPOUNDS (TABLE OF CONTENTS). 21 Dec 48, 10p.
Order from OTS or SLA $1.10 63-14300

Trans. from unidentified German mono., Stuttgart, 1944 (PB-74281).

DESCRIPTORS: *Metalorganic compounds, Organic compounds, Synthesis.

Shapovalova, L. P., Gorokhovatskii, Ya. B., and Rubanik, M. Ya.
OXIDATION OF UNSATURATED HYDROCARBONS ON A COPPER CATALYST. [1963] 8p.
Order from ATS $11.50 ATS-16Q68R

Trans. of Ukr[ainskii] Khim[icheskii] Zh[urnal] (USSR) 1962, v. 28, no. 9, p. 1031-1036.

DESCRIPTORS: *Oxidation, *Hydrocarbons, *Copper, Catalysts.

Tsvetkova, V. I., Firsov, A. P., and Chirkov, N. M.
DETERMINATION POSSIBILITY OF ELEMENTARY ACT CONSTANTS IN CATALYTIC POLYMERIZATION. [1963] 3p.
Order from OTS or SLA $1.10 63-14329

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 1] p. 149-151.
Another trans. is available from ATS $5.00 as ATS-99P60R [1962] 3p.

DESCRIPTORS: *Polymerization, Catalysts, Catalysis, Reaction kinetics, Determination

Vargaftik, M. N., Moiseev, I. I., and Syrkin, Ya. K.
KINETICS OF THE OXIDATION OF ETHYLENE BY PALLADIUM SALTS IN AQUEOUS SOLUTIONS. [1963] 5p.
Order from ATS $9.00 ATS-24Q68R

Trans. of Akademiya Nauk SSSR. Doklady, 1962 v. 147, no. 2, p. 399-402.

DESCRIPTORS: *Ethylenes, Oxidation, Reaction kinetics, *Palladium, Salts, Solutions.

Ziegler, Karl.
PROCEDURE FOR THE PRODUCTION OF POLYETHYLENE WITH HIGH MOLECULAR WEIGHT SUITABLE FOR USE AS SYNTHETIC SUBSTANCE. 30 Nov 55, 13p.
Order from OTS or SLA $1.60 63-10871

Trans. of Belgian patent 533,362, 16 Nov 54, German appl. 17 Nov 53, 15 Dec 53 and 23 Dec 53. Another trans. is available from OTS or SLA $1.60 as 62-16335, 30 Nov 55, 13p.

DESCRIPTORS: *Ethylenes, Polymers, Molecular weight, Production, Catalysts, Free radicals, Metallic compounds, Valence, Chemical reactions, Peroxides, Polyethylene plastics.

Zuydewijn, E. de Roy van.
NON-SATURATED FULFONS. PT. II. OXIDATION, BROMIDATION AND HYDROGENATION OF UNSATURATED SULFONS. [1963] 9p. 10 refs.
Order from SLA $1.10 63-14119

Trans. of Recueil [des] Travaux Chim[iques des Pays-Bas] (Netherlands) 1938, v. 57, p. 445-455.

DESCRIPTORS: *Sulfones, *Oxidation, *Bromination, *Hydrogenation, Organic acids, Chemical bands, Catalysts

Physical Chemistry

KINETICS OF CATALYTIC REACTIONS: SOVIET RESEARCH 1955-61. 12 Jan 62 [104]p. 181 refs.
Order from OTS $2.50 63-11613

DESCRIPTORS: *Catalysis, *Reaction kinetics, *Combustion, *Flame propagation, Ignition, Chain reactions, Peroxides, Molecular isomerism, Oxidation, Ozone, *Explosives, Pressure, Power sources, *Rocket propellants, *Electrochemistry, *Fuel cells, Catalysts, *Semiconductors, Organic compounds, *Free radicals, *Polymers, Magnetic properties, Electrical properties, Bibliographies

The survey is divided into two major topics. The first covers the general field of oxidation reactions and is sub-divided into combustion and precombustion phenomena. They have important implications for power generation, for explosives, and for rocket propellants. The second major area concerns less conventional methods for power generation, the most important of them being fuel cells and related electrode processes.

Akishin, P. A., Gorokhov, L. N., and Sidorov, L. N.
ETUDE DE L'ÉVAPORATION DU NaCl ET DU LiF À L'AIDE D'UN SPECTROMÈTRE DE MASSE MUNI D'UNE CELLULE D'EFFUSION DOUBLE (Mass-Spektrometricheskoe Issledovanie Ispareniya Khlorida Natriya i Ftorida Litiya s Ispol'zovaniem Dvoinoi Effuzionnoi Kamery) [Mass-Spectrometric Study of the Evaporation of Sodium Chloride and Lithium Fluoride with the Aid of a Double Effusion Chamber] tr. by Kahan. 24 Mar 62 [31]p. (foreign text included) 20 refs. CEA Trans. no. R 1643.
Order from OTS or SLA $3.60 63-15480

Trans. in French of Moscow U. Vest[nik. Seriya Matemariki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 6, p. 194-205.

DESCRIPTORS: *Sodium compounds, *Chlorides, *Lithium compounds, *Fluorides, Evaporation, *Thermodynamics, Vapor pressure, Sublimation, Disso iation, *Mass spectroscopy.

Atanasiu, Jean A.
THE ELECTROTITRATION OF CERTAIN ELEMENTS BY MEANS OF PRECIPITATION REACTIONS: EXCERPTS PERTAINING TO LEAD. [1963] 4p.
Order from SLA $1.10 63-10983

Partial trans. of Journal de Chimie Physique (France) 1926, v. 23, p. 501-514.

DESCRIPTORS: *Volumetric analysis, *Electrostatic precipitation, *Lead, Ions, Chromates, Reagents, Potassium compounds, Water, Alcohols, Gasoline, Alkyl radicals, Lead compounds.

Blin, J.
ENERGY OF SOLUTION OF RARE GASES IN METALS. 3 July 62, 16p. 6 refs.
Order from SLA $1.60 63-10087

Trans. from mono. [Centre d'Etude Nucléaires de Saclay, (France). Collogue sur la Diffusion a l'Etat Solide, 3-5 July 58, pub. 1959, 178p.] (Comm[issariat à la] Energie At[omique] (France) no. 1293, 1959, p. 65-72).

DESCRIPTORS: *Helium group gases, *Argon, *Krypton, *Xenon, Heat of solution, Models (Simulations), Spheres, Elasticity, Continuous media, Metals, *Copper, *Silver, *Uranium.

For abstract see Chemical Abstracts 54: 19099, 1960.

Boreskov, G. K.
CATALYST INTERACTION WITH THE REACTION SYSTEM. [1963] 10p. 20 refs.
Order from OTS or SLA $1.10 63-14330

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1958, v. 32 [no. 12] p. 2739-2747.

DESCRIPTORS: *Catalysts, Chemical reactions, Theory, Metals, Oxides, Reaction kinetics.

In the course of a catalytic reaction, besides the action of the catalyst on the reagents, there is always an action on the reacting system on the catalyst leading to changes in its composition and consequently in its properties. To each composition of the reacting mixture there corresponds a definite, steady state composition of the catalyst depending upon the ratio of the rates of interaction between the catalyst and the individual participants of the catalytic reaction. For low rates of interaction with the catalyst the specific catalytic activity depends upon the conditions of the preliminary treatment of the former. On rapid achievement of the steady state composition its change with change in composition of the reaction mixture has an important effect on the kinetics of the catalytic reaction. (Author)

Fedorov, P. I., and Shakhova, M. N.
THE SATURATION VAPOR PRESSURE OF CUPROUS BROMIDE AND CHLORIDE. [1962] [5]p. 14 refs.
Order from OTS or SLA $1.10 63-13715

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1961 [v. 4] no. 4, p. 550-553.

DESCRIPTORS: *Bromides, *Chlorides, *Copper compounds, *Vapor pressure, Molecular association.

The boiling-point method and the saturation method were used to determine the saturation vapor pressure of copper bromide in the 400° to 800°C range. Comparison of the experimental data obtained by these two methods indicates that cuprous bromide is present in the vapor as the trimer Cu_3Br_3, at temperatures above 450°C. Below this temperature further association of the cuprous bromide molecules takes place. The saturation vapor pressure of cuprous bromide at 400° to 800°C was determined by the saturation method. Comparison of the experimental data with the data in the literature on the saturation pressure of cuprous chloride, obtained by the boiling-point method, leads us to conclude that cuprous chloride forms a trimer molecule in the vapor at temperatures above 475°C. Below this temperature further association takes place, yielding sextuple molecules, Cu_6Cl_6. (Author)

Fischer, Werner and Jübermann, Otto.
THE THERMAL PROPERTIES OF HALOGENS. XI. PHOSPHORUS PENTACHLORIDE AND ALUMINUM-PHOSPHORUS-CHLORIDE $AlPCl_8$. [1963] 23p. 48 refs.
Order from SLA $2.60 63-14553

Trans. of Zeitschrift f[ür] Anorg[anische] u[nd] Allgem[eine] Chem[ie] (Germany) 1938, v. 235, p. 337-351.

DESCRIPTORS: *Thermochemistry, *Halogens, *Phosphorus compounds, *Chlorides, *Aluminum compounds, Density, *Sublimation, Vapor pressure, Temperature, Heat of sublimation, Molecular association, Phase studies, Heat of fusion, Crystal structure

Jong, H. G. Bungenberg de and Dekkar, W. A. L.
STUDIES ON COMPLEX COACERVATION. IV. THE BEHAVIOR OF DROPS OF COMPLEX COACERVATE IN AN ELECTRICAL FIELD. [1963] 7p. (figs. tables omitted) 8 refs.
Available on loan from SLA 63-16535

Trans. of Biochemische Zeitschrift (Germany) 1930, v. 221, p. 403-417.

DESCRIPTORS: *Colloids, Separation, Electric fields, *Electrophoresis, Decomposition.

Kasatkin, A. G., Kagan, S. Z., and Trukhanov, V. G.
EMPIRIC EQUATIONS OF EQUILIBRIUM DISTRIBUTION IN LIQUID-LIQUID SYSTEMS. [1963] [10]p. 13 refs.
Order from OTS or SLA $1.10 63-14328

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 6, p. 488-492.
Other translations are available from OTS or SLA $1.60 as 62-10969 [1962] [14]p. and from ICE in v. 1, no. 1, $15.00.

DESCRIPTORS: *Chemical equilibrium, Equations, Liquids, *Phase studies, Solvent extraction.

Kiselev, A. V.
INFLUENCE DE LA NATURE DE L'ADSORBANT, DE L'HÉTÉROGÉNÉITÉ DE SURFACE ET DE L'INTERACTION ADSORBAT-ADSORBAT SUR LES PROPRIÉTÉS D'ADSORPTION DES CORPS SOLIDES (Vliyanie Prirody Adsorbenta, Neodnorodnosti Poverkhnosti i Vzanmodeistviya Adsorbat-Adsorbat na Adsorbtsionnye Svoistva Tverdykh Tel) [Effect of the Nature of the Adsorbent, Nonuniformity of Surface, and Adsorbate-Adsorbate Interaction in the Adsorbtive Properties of Solids. Presented at the Congress of the International Union of Pure and Applied Chemistry IUPAC) (no. 18) Canada, 8 Aug 61] tr. by Kefeli. 14 Nov 62 [52]p. (foreign text included) 55 refs. CEA Trans. no. R 1533.
Order from OTS or SLA $5.60 63-15503

Trans. in French of Moscow U. Vest[nik]. Ser[iya 2]: Khim[iya] (USSR) 1962 [v. 17] no. 1, p. 3-20.
Another trans. in English is available from OTS or SLA $2.60 as 63-13364, JPRS-16405, 29 Nov 62 [26]p.

DESCRIPTORS: *Adsorbents, Solids, *Carbon black, *Graphite, Gels, Surface properties, Geometry, Electrical properties, Magnetic properties, Thermodynamics, Hydrocarbons.

For abstract see Technical Translations 9: 242, 1963.

Kobozev, N. I., Semiokhin, I. A., and Pitskhelauri, E. N.
REACTION BETWEEN HYDROGEN AND OXYGEN IN THE SILENT ELECTRICAL DISCHARGE. VIII. MECHANISM OF THE PROCESS (Vzaimodeistviye Vodoroda s Kislorodom v Tikhom Elektricheskom Razryade). [1962] [15]p. 14 refs.
Order from OTS or SLA $1.60 63-10748

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36 [no. 3] p. 443-448.

DESCRIPTORS: *Hydrogen, *Oxygen, *Electric discharges, Chemical reactions, *Reaction kinetics, Electrochemistry.

Water vapors and particularly argon have been shown to be energy catalysts of the formation and of the decomposition of H_2O_2. At low concentrations they act largely on the former process, being positive catalysts with respect to it. In the proposed mechanism of H_2O_2 formation from the elements a significant part is assigned to the formation of atomic hydrogen and of the electronic underlayer. The latter sharply increases the adsorption potential of oxygen, replacing thereby the cold wall required for hydrogen peroxide formation. The possibility of H atom and ozone interaction on the electronic underlayer and in the gaseous phase has also been taken into account. (Author)

Kutzelnigg, Werner and Mecke, Reinhard.
SPECTROSCOPIC INVESTIGATION OF ORGANIC IONS. PT. V. THE STRUCTURE OF SALTS OF ACETAMIDE (Spektroskopische Untersuchungen an Organischen Ionen. V. Die Struktur der Salze des Acetamids). 12 Nov 62 [33]p. (foreign text included) 39 refs.
Order from SLA $3.60 63-10291

Trans. of Spectrochimica Acta (Gt. Brit.) 1962, v. 18, p. 549-560.

DESCRIPTORS: *Acetamides, Salts, *Complex compounds, Molecular structure, Determination, Gases, Solutions, Crystals, Spectra (Infrared), *Platinum compounds, *Mercury compounds, Organic compounds, Ions, Spectrographic analysis

The vibrational frequency assignment is given for acetamide in the gas phase, in solution and in the two known crystal modifications. From a study of two metal complexes of the neutral acetamide it is evident that the acetamide molecule is attached to the metal by the oxygen atom. The structure of the acetamide cation formed by addition of a proton to acetamide is shown to be an oxonium type ion. The frequency assignments of this cation as well as the acetamide anion formed by the removal of a proton are also given. The structures of the heavy metal salts of acetamide, which are supposed to be "inner complexes", are discussed. (Author)

Lippmann, Friedrich.
THE APPARATUS: THE FURNACE. [1963] 11p. (figs. refs. omitted).
Order from SLA $1.60 63-14162

Trans. of Keramische Zeitschrift (West Germany) 1959, v. 11, no. 9, p. 476-478.

DESCRIPTORS: *Furnaces, Electric furnaces, Temperature control, Operation, *Calorimetry, *Laboratory furnaces.

Manelis, G. B., Vinnik, M. I., and Chirkov, N. M.
ACIDITY FUNCTION OF THE DIETHYL ETHER-BF_3 SYSTEM (Funktsiya Kislotnosti Sistemy Diethylovyi Efir-BF_3). Apr 63 [10]p. 7 refs. RTS-2232.
Order from OTS or SLA $1.10 63-19134

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1959, v. 33, no. 5, p. 1030-1034.

DESCRIPTORS: *Ethyl ethers, *Boron compounds, Fluorides, Acid-base equilibrium, Determination, Chemical indicators, Aniline derivatives, *Butenes, Polymerization.

The acidity function H_0 of the system ether-boron fluoride was determined over a broad range of concentrations. It was shown that in acidity (H_0 = -6.22 for 100%) $(C_2H_5)_2OBF_3$ exceeds phosphoric acid. Quantitative data on the rate of isobutylene polymerization agree well with those on the acidity function. An equation is proposed relating the acidity function and the concentration of $(C_2H_5)_2OBF_3$ in $(C_2H_5)_2O$. (Author)

Nagaev, E. L.
MAGNETIC PROPERTIES OF THE ADSORBED ATOM LAYER [Magnitnoe Svoistva Sloya Adsorbirovannykh Atomov]. [1962] 12p. 12 refs.
Order from OTS or SLA $1.60 63-10856

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 6, p. 847-853.
Another trans. is available in French from OTS or SLA $2.60 as 62-33748, CEA-tr-R1637, 27 Apr 62 [21]p. (Russian text included).

DESCRIPTORS: *Catalysts, Atoms, Adsorption, *Magnetic properties, Paramagnetic resonance.

For abstract see Technical Translations 9: 798, 1963.

Ogorodnikov, S. K., Kogan, V. B. and others.
RELATION BETWEEN THE DEVIATIONS FROM ADDITIVITY OF REFRACTIVE INDEX AND SPECIFIC WEIGHT OF HYDROCARBON MIXTURES WITH POLAR SUBSTANCES AND THE DEVIATIONS FROM IDEALITY OF THESE SYSTEMS. [1963] 7p. 10 refs.
Order from OTS or SLA $1.10 63-14324

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 12] p. 2792-2796.

DESCRIPTORS: *Refractive index, Density, Hydrocarbons, *Pentanes, *Hexanes, *Heptanes, *Pentenes, Methyl radicals, Ethyl radicals, *Ethylenes, *Hexenes, *Isoprenes, *Piperdienes, Mixtures, Formates, Methanols, Acetonitriles, Formamides, Vapor pressure, Chemical analysis.

Peters, Kurt and Meyer, Karl.
THE THERMIC FORMATION OF ACETYLENE FROM METHANE. [1963] [13]p. (figs. refs. omitted).
Order from SLA $1.60 [63-14226

Trans. of Brennstoff-Chemie (Germany) [1929] v. 10, no. 16, p. 324-329.

DESCRIPTORS: *Acetylenes, *Methanes, Heating, Synthesis (Chemistry), Pyrolysis, *Chemical equilibrium, Thermochemistry, Statistical data

Piazza, Jose.
RATE OF DECOMPOSITION OF THE CATHODIC DEPOSITS FORMED BY THE ACTION OF AN ELECTRIC DISCHARGE ON PLATINUM ELECTRODES IN THE PRESENCE OF HELIUM, NITROGEN, AND OXYGEN AT LOW PRESSURE. 1 Dec 61 [22]p. 5 refs.
Order from SLA $2.60 63-10135

Trans. of [Universidad Nacional del Litoral]. Inst[itotu de] Invest[igaciones] Cient[ificas y] Tecnol[ogicas]. Anales (Argentina) 1933, v. 2, p. 33-49.

DESCRIPTORS: *Platinum electrodes, Cathodes, Deposits, Decomposition, *Platinum compounds, *Helium, *Nitrogen compounds, *Oxygen compounds, Electric discharges.

The decomposition is studied of platinum-helium, platinum-nitrogen, and platinum-oxygen compounds, obtained by cathodic sputtering. The results showed that at low temperature there is observed a slight release of gas, which disappears with cooling. If the temperature is raised, at a certain point the release is almost totally irreversible. Decomposition in all the products begins at very definite temperatures. The isotherma! decomposition curves of platinum-helium and of platinum-nitrogen follow similar paths. These curves do not obey the laws for reactions of a normal molecular order, they show the phenomena of positive acceleration (autocatalysis). A periodicity is observable in the release of the gas. The same product can have several decomposition points; it must be conceded that this is confirmation of several combinations. (Author)

Richter, H., Kulcke, W., and Specht, H.
THE STRUCTURE OF AMORPHOUS SELENIUM. [1963] 32p.
Order from ATS $39.50 ATS-75Q67G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1952, v. 7a, p. 511-532.

DESCRIPTORS: *Selenium, Physical properties, Crystal structure.

Roginskii, S. Z. and Khait, Yu. L.
THE COMPENSATION EFFECT IN ACTIVATION PROCESSES FROM THE VIEWPOINT OF STATISTICAL KINETICS. 2. POSSIBLE PHYSICAL CAUSES OF THE APPEARANCE OF THE COMPENSATION EFFECT IN SOME SYSTEMS AND PROCESSES (Kompensatsionnyi Effekt v Aktivatsionnykh Protsessakh s Tochki Zreniya Statisticheskoi Kinetiki. Soobshchenie 2. Vozmozhnye Fizicheskie Prichiny Poyavleniya Kompensatsionnogo Effekta v Nekotorykh Sistemakh i Protsessakh) tr. by J. Hardy. 11 Oct 62 [22]p. (foreign text included) 10 refs. [CSIRO] Trans. no. 5800.
Order from OTS or SLA $2.60 63-15261

Trans. of #Akademiya Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izvestiya, 1961, no. 7, p. 1198-1205.

DESCRIPTORS: *Reaction kinetics, Statistical analysis, *Thermochemistry, *Heat of activation.

An explanation of some general statistical and kinetic causes responsible for the strong dependence of the pre-exponential factor on the activation energy in formulas for the rate of activation processes, and an examination of the corresponding formulas. It is shown that, owing to the localization of the overwhelming majority of elementary acts of activation processes in macroscopically small regions with an "instantaneous temperature", we observe an excessive mean temperature of the system and, depending on the activation energy, a sudden dependence of the pre-exponential factor on the activation energy appears in the expression for the constant of the rate. The defined conditions which are favourable for the appearance of a significant pre-exponential factor, are typical for condensed systems. (Author)

Sansoni, Bruno and Baumgartner, Louis.
SEPARATION OF PHOSPHATES BY PAPER ELECTROPHORESIS. V. HIGH VOLTAGE PAPER ELECTROPHORESIS OF CONDENSED PHOSPHATES AND METAPHOSPHATES. Preliminary rept. International Congress for Pure and Applied Chemistry (no. 4) Lisbon 1956. [1962] 17p. 21 refs.
Order from SLA $1.60 63-10440

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1957, v. 158, p. 241-251.

DESCRIPTORS: *Electrophoresis, *Paper, Separation, *Phosphates, Inorganic compounds, Salts, Ions.

This report shows that high-voltage paper electrophoresis, is of importance for the separation of inorganic ions. The method appears suitable (1) for rapid separation of inorganic ions in the control of technical operations, (2) for investigating unstable ions with half-life periods of ≤1 hour, and (3) especially for the separation of higher molecular inorganic ions, which are difficultly approachable by classical methods and do not migrate paper chromatographically. In contrast to low-voltage electrophoresis, additional separating effects appear possible owing to highly different molecular weights. The employment of high-voltage paper electrophoresis allows particularly new kinds of separations of condensed phosphates and metaphosphates in a very short working time and under mild and relatively well-reproducible experimental conditions. The higher molecular chief constituent of Graham's salt is extended to a continuous band. In the unpurified Graham's salt four fractions were found which were hitherto unknown and which follow trimeta- and tetrametaphosphate and belong probably to higher ring-shaped metaphosphates. (Author)

Shantarovich, P. S. and Pavlov, B. V.
ON THE MECHANISM OF METHANE DECOMPOSITION. [1963] 13p. 9 refs.
Order from OTS or SLA $1.60 63-14321

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30 [no. 4] p. 811-820.

DESCRIPTORS: *Methanes, Decomposition, Reaction kinetics, *Chain reactions, Free radicals, Methyl radicals, Hydrogen, Inhibition, Heat of activation.

Kinetics of thermal homogenous CH_4 decomposition was studied and the effect of H_2 inhibition of this reaction was investigated. It was found, that the homogenous decomposition of CH_4 is a reaction of the first order, occurring by the chain mechanism through free radicals with the effective constant $k = k_3k_4/k_7$. It was shown, that the found effective activation energy (E = 85 kcal) of the brutto-process is the real activation energy of the reaction ($CH_3 \rightarrow CH_2 + H$), as the limiting stage in the chain rupture of methane. The activation energy of the reaction: ($CH_2 + H_2 \rightarrow CH_4$) was found from data of the H_2 effect on CH_4 decomposition and it is equal to $E_5 = 11$ kcal. This value agrees with the one, assumed according to preliminary data on CH_4 decomposition in diluted streams, for the energetical barrier $\varepsilon \approx 9$ kcal. in the reaction ($CH_4 \rightarrow CH_2 + H_2$) and, consequently, permits the statement, that the biradical CH_2 is the primary product of methane decomposition and it is formed with the $E_1 = 92$ to 94 kcal. (Author)

Shchukarev, S. A. and Suborov, A. V.
A THERMODYNAMIC INVESTIGATION OF CERTAIN CHLORINE DERIVATIVES OF MOLYBDENUM AND TUNGSTEN. [1962] 15p. 26 refs.
Order from OTS or SLA $1.60 63-13032

Trans. of Leningrad U. Vestnik (USSR) 1961 [v. 16] no. 4 [Seriya Fizika i Khimii no. 1] p. 87-99.

DESCRIPTORS: *Molybdenum compounds, *Tungsten compounds, *Chlorides, *Oxychlorides, Evaporation, Dissociation, Disproportionation, Transition temperature, Measurement, Chemical reactions, *Thermodynamics.

The processes of evaporation, dissociation and disproportionation in the system $MoCl_5$ - MoO_3 and WCl_6 - WO_3 by means of membrane and optico-tensimetric methods were studied. Some thermodynamic functions of these processes were obtained. (Author)

Tatevskii, V. M., Spiridonov, V. P., and Akishin, P. A.
A FEATURE OF THE INTERATOMIC DISTANCES IN MOLECULES OF THE HALIDES OF VARIOUS GROUPS IN THE PERIODIC SYSTEM OF ELEMENTS. [1962] [7]p. 16 refs.
Order from OTS or SLA $1.10 63-13861

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138, no. 3, p. 621-624.

DESCRIPTORS: *Halides, *Molecular structure, Group I elements, Group II elements, Group IV elements.

Tunitskii, N. N., Kupriyanov, S. E., and Perov, A. A.
MASS SPECTRA OF MOLECULES AND RADIATION CHEMISTRY. [1963] 10p.
Order from ATS $14.25 ATS-56Q68R

Trans. of #Akad[emiya] Nauk SSSR. Otd[elenie] Khim[icheskikh] Nauk. Izv[estiya] 1962, no. 11, p. 1945-1953.

DESCRIPTORS: *Radiation chemistry, *Molecules, *Mass spectrum.

Vagin, E. V. and Zhukhovitskii, A. A.
THEORY OF THERMAL-ADSORPTIVE SEPARATION 26 June 61, 25p. 6 refs.
Order from OTS or SLA $2.60 63-10216

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32, no. 10, p. 2362-2373.

DESCRIPTORS: *Adsorption, Separation, Gases, Sorption, Chromatographic analysis, Thermal diffusion, Equations of state, Theory.

A theory of thermal-adsorptive separation of gases based on the assumption of pressure equality in the sorbent layer is presented. In the case of an infinitely great sorption rate and of absence of longitudinal diffusion in the process of thermal desorption, a distribution of the adsorbed substance corresponding to the temperature field is established, the motion velocities of the temperature field and the distributions being equal among themselves. In order to determine the position of the front of the adsorbed substance in the temperature field, it is necessary to know the total quantity of substance, the adsorption isobar and the law of distribution of temperatures along the layer. It is proved that mixtures of gases with linear adsorption isotherms and isotherms of Langmuir must separate completely. For this case, the relationships determining the position of each component in the temperature field are given. The equation describing the boundary spread between components is derived. It is shown that the effect of the longitudinal diffusion as well as of the finiteness of the sorption rate upon the boundary spread between components is described by one general equation. (Author)

Vasil'ev, S. S.
FUNDAMENTAL EQUATIONS FOR THE KINETICS OF CHAIN REACTIONS (Osnovnye Uravneniya Kinetiki Tsepnykh Reaktsii). Nov 62 [19]p. 11 refs. RTS-2159.
Order from OTS or SLA $1.60 63-15267

Trans. from unidentified mono. pub. by Akad[emiya] Nauk SSSR, 1955, p. 137-149.

DESCRIPTORS: Chemical reactions, *Chain reactions, *Reaction kinetics, Equations.

The derivation of equations of the kinetics of chain reactions was demonstrated, enabling the growth of concentration of active intermediate particles to be calculated from the start of the reaction to the point where consumption of reactants becomes significant. It was shown that in the initial moments of time the kinetic curves of chain reactions can have a quite specific form, which cannot be explained on the basis of any approximate treatment. Particular cases are discussed of the general kinetic relations obtained and it was shown that these particular cases can lead to the equations previously applied in the kinetics of chain reactions. Arguments are advanced in favour of the view that the difference between chain, inductive or consecutive processes cannot be considered as one of principle. (Author)

Vishnyakova, T. P., Paushkin, Ya. M. and others.
EFFECT OF THE CHEMICAL COMPOSITION OF HYDROCARBONS AND OF STEAM ON THE FORMATION DYNAMICS OF OLEFINS IN HIGH TEMPERATURE PYROLYSIS. [1963] [5]p.
Order from OTS or SLA $1.10 63-14325

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 12, p. 11-14.

DESCRIPTORS: *Ethylenes, *Propenes, *Hydrocarbons, *Steam, Gases, *Pyrolysis, Reaction kinetics.

The quality of starting raw-material affects in gassification processes, the gas composition and also the yield in olefins. Greatest olefin content is produced during gassification of the fraction 200-300 C and of cetane. Gas with the greatest olefin content (24-38%) is produced at a residence time of 0.5-0.6 sec., to which corresponds also the greatest weight yield in olefins with respect to the raw-material (25-35%). Gas yield to the raw-material reaches 80-90% with rising to 1.8-2.0 sec. residence time. Gas composition at this residence time is close for all investigated forms of raw-material. Consequently, during production of energy-gas the process is suitably run at higher residence-time. (Author)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 194 (EARTH SCIENCES SERIES). 5 June 63, 4p. JPRS: 19576.
Order from OTS $0.50 63-21991

Abstract trans. of [Polska Akademia Nauk]. Bulletin: Serie des Sciences Geologiques et Geographiques, 1963, v. 11, no. 1, p. 3-39, 41-49.

DESCRIPTORS: *Abstracts, *Geophysics, *Petrology, *Stratigraphy, Sedimentation, *Paleoecology, Oil, Water, Hydraulic accumulators, Hydrology, *Poland.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 199 (EARTH SCIENCES SERIES). 5 June 63, 4p. JPRS: 19581.
Order from OTS $0.50 63-21996

Abstract trans. of Novenytermeles (Hungary) 1963, v. 12, no. 1, p. 1-86.

DESCRIPTORS: *Abstracts, *Geophysics, *Agriculture, Cereals, Vegetables, Pest control, Physiology, Corn, Diseases, Viruses, Potatoes, *Hungary.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 137, NOS. 1-6. Nov 62, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 72-82, 135-183; no. 2, p. 327-330, 373-414; no. 3, p. 572-583, 657-694; no. 4, p. 844-851, 915-950, 957-960; no. 5, p. 1098-1105, 1166-1213; no. 6, p. 1427-1447.

DESCRIPTORS: Earth, *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Mineralogy, *Paleoecology, *Petrology

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 139, NOS. 1-6. Jan 63, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 1, p. 91-93, 163-198, 203-207; no. 2, p. 431-459, 461-462; no. 3, p. 673-712; no. 4, p. 943-965, 976-979; no. 5, p. 1098-1100, 1173-1220; no. 6, p. 1419-1459, 1461-1466.

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Mineralogy, *Paleoecology, *Permafrost, Petrology.

SOVIET HYDROLOGY: SELECTED PAPERS, 1962, NO. 2, P. 111-226. 1962, 1v. 122 refs.
Order from AGU $7.50, $20.00/year

Trans. of [Meteorologiya i Gidrologiya] (USSR) 1962, no. 7, p. 19-25, 55-56; no. 8, p. 22-31, 33-35; [Gosudarstvennyi Gidrologicheskii Institut. Trudy] (USSR) 1962, v. 82, p. 3-33, 76-114; [Ukrainskii Nauchno-Issledovatel'skii Gidrometeorologicheskii Institut. Trudy] (USSR) 1962, v. 34, p. 3-23, 39-52. Includes selected abstracts of related articles not translated.

DESCRIPTORS: *Hydrology, *Hydraulic research, Water, Fluid flow, Ice, Drainage, Rivers, Albedo (Astronomy), Solar radiation, Sedimentation, Moisture Clay, Soil mechanics, Evaporation, Temperature, Abstracts, Lakes

Contents:
Calculations of dimensions and speed of shifting of channel formations, by N. S. Znamenskaya
Concerning the movement of flow under an ice cover, by V. B. Dul'nev
On the annual runoff norm and its variability in small rivers, by E. Sh. Azarkovich and M. L. Leivikov
Dependence of ice albedo on incidence angle of solar rays, by K. S. Lyubomirova
Discharge of channel forming sediments and elements of sand waves, by A. Sh. Barekyan
Method for forecasting the spring runoff in the basin of the Don River, by S. I. Kharchenko
Hydro-physical properties and moisture content of loess type clay-loam in the zone of aeration, by A. K. Filippova
Total evaporation from various types of arable land with optimal soil moisture, by K. I. Kharchenko
Runoff volume of spring high water of small streams of the Ukraine, by L. G. Onufrienko
Changes in moisture of soil-grounds in the steppe during the summer period, by I. S. Shpak
Concerning the thermal conditions of the V. I. Lenin Lake, by I. T. Krivasheeva
Abstracts

Larras, J.
NEW RESEARCH ON THE BREAKING OF WAVES [Nouvelles Recherches sur le Déferlement des Lames]. [1962] 12p. 2 refs.
Order from SLA $1.60 62-16757

Trans. of la Houille Blanche (France) 1955 [v. 10] spec. no. A, p. 340-344.

DESCRIPTORS: *Ocean waves, Oceanology, *Fluid mechanics.

The investigations relate to the pressures caused by waves breaking along obstacles of mild slope. These investigations give evidence of the same short and long term "shock pressures" ("gifle" and "bourrage") on a smooth entirely unobstructed beach as on a vertical wall and has shown that they follow practically the same laws. It does not seem therefore that the fugitive overpressures of the breaking wave can be attributed to air trapped between the wave and the obstacle but rather to internal freeing of energy of the same order as shock waves. (Author)

Climatology and Meteorology

Borovikov, A. M. and Kostarev, V. V.
THE ACCURACY OF MEASURING CLOUD HEIGHTS BY RADAR. [1963] 6p.
Order from ATS $7.50 ATS-33Q68R

Trans. of Tsentr[al'naya] Aerolog[icheskaya] Observ[atoriya]. Tr[udy] (USSR) 1961, no. 36, p. 37-42.

DESCRIPTORS: *Clouds, *Meterological radar, *Cloud height indicators, Measurement, Radar.

Dobryshman, E. M.
DEFINING THE MINIMUM TEMPERATURE VALUES IN THE ANTARCTIC (Utochnenie Znachenii Minimal'-noi Temperatury v Antarktike) tr. by Irene A. Donehoo. Nov 62, 2p. 2 refs. WB/T-93.
Order from OTS $0.50 63-11609

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 8, p. 33.

DESCRIPTORS: Temperature, *Antarctic regions, Determination, *Atmospheric temperature.

Kostarev, V. V.
RADAR MEASUREMENT OF THE WATER CONTENT OF CLOUDS. [1963] 7p.
Order from ATS $9.85 ATS-32Q68R

Trans. of Tsentr[al'naya] Aerolog[icheskaya] Observ[atoriya]. Tr[udy] (USSR) 1961, no. 36, p. 31-36.

DESCRIPTORS: *Clouds, *Meteorological radar, *Atmospheric condensation, Water, Measurement.

Kozharin, V. S.
COMPUTATION OF THE HEIGHT OF THE BASE OF LOW STRATIFORM CLOUDS. [1962] 8p.
Order from ATS $11.75 ATS-21P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Trudy (USSR) 1962, no. 126[188] p. 62-69.

DESCRIPTORS: *Clouds, *Height finding, Numerical analysis, Meteorological parameters.

Zamorski, A. D.
JET STREAM CLOUDS, tr. by E. R. Hope. Apr 63 [4]p. DSIS T 386 R.
Order from NRCC NRCC C-4408

Trans. of Priroda (USSR) 1963 [v. 52] no. 1, p. 104-106.

DESCRIPTORS: *Jet streams (Meteorology), Atmospheric motion, *Clouds, Physical properties, Meteorology, Cumulus clouds.

Zeitunyan, Kh. N.
HYDRODYNAMIC CALCULATION OF THE OROGRAPHIC CLOUDINESS IN A STABLE AND UNSTABLE ATMOSPHERE. 9 May 63, 8p. 4 refs. JPRS: 19119.
Order from OTS $0.50 63-21791

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 3, p. 585-588.

DESCRIPTORS: *Atmosphere, Stratification, Stability, *Clouds, *Atmospheric motion, *Terrain, Numerical analysis.

The purpose of the work is to survey the characteristics that arise in conditions of unstable stratification and to give a comparison between stable and unstable cases. We will suppose that the speed of the basic motion U (Z_1) is directed along the horizontal axis x_1 where at first the speed U and the temperature $\tilde{T}$ of the basic primary motion will not in any way limited in their dependence on the height Z_1. (Author)

Frost Science

Inouye, Rikita and Anzai, Masanao.
SNOW GAUGE OF HIGH CATCHING RATE, tr. by E. R. Hope. May 63 [8]p. 3 refs. DSIS T 69 J.
Order from NRCC NRCC C-4389

Trans. of Seppyo (Japan) 1959, v. 21, no. 6, p. 178-181.

DESCRIPTORS: *Snow, *Meters, *Meteorological instruments, Effectiveness, Design, Measurement, Tests, Meteorology

Martynov, G. A.
HEAT AND MOISTURE TRANSFER IN FREEZING AND THAWING SOILS (Teplo- i Vlagoperedacha v Promerzayushchikh i Protaivayushchikh Gruntakh) tr. by E. R. Hope. 1963, 56p. 58 refs. NRCC Technical Trans. 1065; NRCC DBR-105; DSIS T 372 R.
Order from NRCC $3.00 NRCC C-4396

Trans. of mono. Osnovy Geokriologii (Merzlotovedeniya) (Principles of Geocryology (Permafrost Studies)) Moscow, 1959, pt. 1, Obshchaya Geokriologiya, chap. 6, p. 153-192.

DESCRIPTORS: *Permafrost, *Soil mechanics, *Heat transfer, *Moisture, *Soils, Freezing, Melting, Convection, Thermal conductivity, Partial differential equations, Phase studies

Vel'mina, N. A.
PROBLEMS OF INTERACTION BETWEEN SUBSURFACE WATERS AND PERMAFROST ROCKS IN THE AREA OF THE ALDAN CRYSTALLINE MASSIF (Voprosy Vzaimodeistviya Podzemnykh Vod i Mnogoletnemerzlykh Porod v Predelakh Aldanskogo Kristallicheskogo Massiva). 1963, 5p. 2 refs. PL-480 Int.
Order from OTS $0.50 63-11133

Trans. of mono. Materialy po Obshchemu Merzlotovedeniyu [Moscow] 1959, p. 138-141.

DESCRIPTORS: *Permafrost, *Rock (Geology), Water, *Geology, *Hydrology.

Geodesy

Gol'dman, L. M.
NEW ACHIEVEMENTS IN THE USE OF AERIAL PHOTOGRAPHY FOR THE GEOGRAPHIC STUDY OF THE TERRAIN. 27 May 63, 6p. JPRS: 19424.
Order from OTS $0.50 63-21924

Trans. of mono. Ispol'zovanie Topograficheskikh Kartograficheskikh Issledovanii (Use of Topographic Cartographic Research) Moscow, 1958, p. 31-36.

DESCRIPTORS: *Aerial photography, *Mapping, *Terrain.

Ledersteger, K.
GRAVITY FIELD IN THE VERTICAL LINE: COMPUTATION OF THE TRUE GRID, tr. by H. Thomas. June 61 [21]p. 5 refs. ACIC TC-272.
Order from OTS or SLA $1.60 62-25630

Trans. from Suomen Geodeettinen Laitos. Julkaisuja (Finland) 1955, no. 46.

DESCRIPTORS: *Gravity, Gravimeters, Gravity anomalies, Geodesics

Podobedov, N. S.
TOPOGRAPHIC MAPS, THEIR DEMAND AND USE IN THE NATIONAL ECONOMY. 22 May 63, 28p. 3 refs. JPRS: 19321.
Order from OTS $0.75 63-21877

Trans. of mono. Topograficheskoe Kartografirovanie (Topographic Map Making) Moscow, 1962, p. 3-21.

DESCRIPTORS: *Maps, *Terrain, Mapping, Economics, Preparation, Surveying, Geology.

Contents:
Topics include: Features of the cartographic representation of a locality; general principles in the organization of topographic operations; on documents regulating topographic work; and, the use of topographic maps in land-reclamation work, in soils surveys, in agriculture, in road construction, and in geological work.

Selyakov, N. Ya.
"WEIGHT" DURING WEIGHTLESSNESS, tr. by B. W. Kuvshinoff. 23 Apr 63, 4p. APL/JHU TG 230-T354.
Order from OTS $0.50 63-11631

Trans. of Priroda (USSR) 1962 [v. 51] no. 9, p. 114-115.

DESCRIPTORS: Weight, *Weightlessness, Gravity, *Satellites (Artificial), *Tides, Gravity anomalies, *Meteorites.

A discussion of the use of tidal phenomena to determine the distance of a satellite from earth, to study the gravity field for the purpose of finding ore deposits, and to develop a method of locating large meteorites passing close by a satellite or a rocket moving through space.

Zoltan, Antos.
CURRENT PROBLEMS IN SURVEYING AND MAPPING IN HUNGARY. 6 June 63, 12p. JPRS: 19587.
Order from OTS $0.50 63-21999

Trans. of Geodezia es Kartografia (Hungary) 1963, v. 15, no. 2, p. 81-85.

DESCRIPTORS: *Mapping, *Surveying, *Hungary, Geodesics, Photogrammetry.

Geology

ALL-UNION RESEARCH GEOLOGICAL INSTITUTE: PROCEEDINGS. 5 May 61, 9p.
Order from OTS or SLA $1.10 61-19747

Trans. of mono. Paleontologiya i Stratigrafiya: Sbornik Statei, Moscow, 1955, p. 22ff.

DESCRIPTORS: Scientific research, *Plants (Botany), Taxonomy, *Geology.

GEOCHEMISTRY, 1962, NO. 1, P. 1-108. [1962] 1v.
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C., $4.00, $25.00/year

Trans. of Geokhimiya (USSR) 1962, no. 1.

DESCRIPTORS: *Geochemistry, *Minerals, *Crystal structure, *Hydrocarbons, *Gases, *Bitumens, *Petrology, *Rare earth elements, *Cesium, *Boron, *Gallium, *Geologic age determination, Errors, Radioactive isotopes, *Numerical analysis.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 10, PT. 1, P. 1097-1174. Oct 62, 1v. 119 refs.
Order from AGI $5.00, $55.00/year

Trans. of Priroda (USSR) 1962 [v. 51] no. 6, p. 14-18; Sovetskaya Geologiya (USSR) 1961, no. 4, p. 7-59, 114-126, 140-145.
##Another trans. of p. 7-24 is available from ATS $25.85 as ATS-90P50R [1962] 17p. and of p. 25-45 from OTS or SLA $5.60 as 61-27335, 5 July 61, 58p.

DESCRIPTORS: *Geology, Periodicals, Oils, Deposits, Siberia, Indexes, Phase studies, Sedimentary rock, Coal, Organic materials, Geogony, Terrestrial magnetism, Geologic age determination, Geochemistry, Scientific personnel, Rare earth elements.

Contents:
Oil in Siberia, by A. A. Trofimuk
Soviet Geology, 1961, no. 4: contents, critique, selected publication, availability of translations
##Stages in the alteration of sedimentary rocks and paragenetic relations of combustible minerals, by I. I. Ammosov
##On continental drift (from paleomagnetic data) by I. A. Rezanov
Paleomagnetic methods for correlating the age of rocks, by V. V. Kochegura
Wall rock alterations of hydrothermal-pneumatolytic deposits of rare elements, by A. A. Beus
Commemorative events in Apr-June 61, review no. 30, by V. V. Tikhomirov and N. A. Voskresenskaya
Reference section.

Bekker-Migdisova, E. E.
NEW PERMIAN HOMOPTERA OF THE EUROPEAN PART OF THE USSR [Novye Permskie Ravnokrylye Evropeiskoi Chasti SSSR]. [1963] [136]p. 58 refs.
Order from OTS or SLA $10.50 63-19217

Trans. of [Akademiya Nauk SSSR. Paleontologicheskii Institut. Trudy] 1960, v. 76 [111p.]

DESCRIPTORS: Taxonomy, *Homoptera, Paleoecology, Geology, Stratiography, Distribution.

Topics include: History of research on the Permian Homoptera; the stratagraphic importance of the Homoptera; the taxonomy of the group and its constituents (including keys based on forewing veination); and, a critique of the revisions of J. W. Evans.

Ch'ang, Ta.
THE GEOLOGY OF CHINA. 16 May 63, 623p. 19 refs. JPRS: 19209.
Order from OTS $7.50 63-21820

Trans. of mono. Chung Kuo Ti Chih Hsüeh, Peiping, 1959, 344p.
Another trans. of p. 338-343 is available from OTS or SLA $5.60 in 63-15117, JPRS-17165, 16 Jan 63 [54]p.

DESCRIPTORS: *Geology, *China, Geological survey, *Geogony, *Economic geology, *Minerals, *Petrology, Mountains.

Introduction
The Basic Concept of The Geologic Structures of China
North China Table
Yangtze Table
Cathaysian Table
Northwest Hercynian Zone of Fold
Northeast Hercynian Zone of Fold
Alpine Zone of Fold
A Summation of The Geology of China

Chekalyuk, E. B.
TEMPERATURE FIELD OF A STRATUM ON INJECTION OF A HEAT-CARRIER INTO A WELL (Temperaturnoe Pode Plasta pri Nagnetanii Teplonositelya v Skvazhinu). [1962] [12]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-14607

Trans. of Neftyanoe Khozyaistvo (USSR) 1955, v. 33, no. 4, p. 39-43.

DESCRIPTORS: Well drilling, *Oils, *Recovery, *Heat treatment, Stratigraphy, Injection.

Gayanov, A. G. and Smirnov, L. P.
THE STRUCTURE OF THE EARTH'S CRUST IN THE ZONE OF TRANSITION FROM THE ASIAN CONTINENT TO THE PACIFIC OCEAN. 5 June 63, 16p. 28 refs. JPRS: 19567.
Order from OTS $0.50 63-21986

Trans. of Sovetskaya Geologiya (USSR) 1962, no. 3, p. 108-118.

DESCRIPTORS: *Stratigraphy, Structures, Earth, Lithosphere, *Asia, *Pacific Ocean, Geophysics, *Geology.

Nekrasov, I. A. and Raudonis, P. A.
METEORITE CRATERS, tr. by E. R. Hope. May 63 [5]p. 3 refs. DSIS T 385 R.
Order from NRCC NRCC C-4399

Trans. of Priroda (USSR) 1963 [v. 52] no. 1, p. 102-104.

DESCRIPTORS: *Meteorites, *Cratering, *Silicon compounds, Dioxides, Detection, Analysis, *Petrology.

Mineralogy

Bokii, G. B. and Plusnina, I. I.
INFRARED ABSORPTION SPECTRA OF RING SILICATES IN THE WAVE-LENGTH RANGE OF 7-21 MICRONS: PROBLEM OF THE DETERMINATION OF SILICATES BY THEIR INFRARED SPECTRA. [1962] 13p. (figs. omitted) 33 refs.
Order from OTS or SLA $1.60 63-10685

Trans. of [Nauchnye Doklady Vysshei Shkoly. Geologo-Geograficheskie Nauki] (USSR) 1958, no. 3 [p. 116-123]

DESCRIPTORS: *Silicates, Crystal structure, Minerals, Absorption spectrum, *Infrared spectroscopy, Spectrographic analysis.

Deev, V. I., and Smirnov, V. I.
SATURATION PRESSURE OF RHENIUM DISULFIDE, DIOXIDE, AND TRIOXIDES. [1962] [5]p. 9 refs.
Order from OTS or SLA $1.10 63-13717

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140 [no. 4] p. 822-824.

DESCRIPTORS: *Rhenium compounds, *Oxides, *Dioxides, *Sulfides, *Vapor pressure, Ores.

Eigeles, M. A.
SELECTIVE FLOTATION OF POLAR NONMETALLIC MINERALS. [1963] 33p. 28 refs.
Order from OTS or SLA $3.60 63-14554

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Mineral'nogo Syr'ya. Trudy (USSR) 1938, v. 127, p. 22-36.

DESCRIPTORS: *Minerals, *Non-metals, Flotation (Separation), Selection, *Ores (Non-metallic).

Eigeles, M. A. and Fedorov, P. N.
INVESTIGATION OF COLLECTORS FOR THE FLOTATION OF NONMETALLIC MINERALS. [1963] 22p. 19 refs.
Order from OTS or SLA $2.60 63-14555

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Mineral'nogo Syr'ya. Trudy (USSR) 1938, v. 127, p. 36-47.

DESCRIPTORS: *Minerals, *Non-metals, Flotation (Separation), Collecting methods, *Ores (Non-metallic).

Finn, Willi.
FLOW CHANNEL FOR THE WASHING OF ORES. [1963] 5p.
Order from OTS or SLA $1.10 63-14638

Trans. of German patent 826,883, cl. 1a, gr. 6 K2544 VIb/1a, issued 7 Jan 52, by Fried. Krupp Steel Construction, pat. from 14 Apr 50, granted 29 Nov 51.

DESCRIPTORS: *Ores (Metal sources), Rock (Geology), Flotation (Separation), Cleaning, Water, Conveyors, Sprays.

Makhlaev, V. G.
AN ORIGINAL TEXTURE OF DOLOMITE (Ob Odnoi Original'noi Strukture Dolomita), tr. by Ivan J. Mittin. 1962 [13]p. (figs. omitted).
Order from OTS or SLA $1.60 63-13870

Trans. of Vsesoyuznoe Mineralogicheskoe Obshchestvo. Zapiski (USSR) 1961, v. 90, no. 4, p. 472-478.

DESCRIPTORS: *Dolomite, Petrology, Crystal structure, Structural properties, Recrystallization.

Wietbrock, Rudi.
CLEANING OF ORES WITH CLAY-SILICIC ACID-CONTAINING BINDING AGENTS. [1963] 4p.
Order from OTS or SLA $1.10 63-14639

Trans. of German patent 826,884, cl. 1a, gr. 14 E 2276 VIb/1a, issued 7 Jan 52, by Ilsede Iron Mine Joint Stock Co., pat. from 28 Sep 50, granted 29 Nov 51.

DESCRIPTORS: Binders, Silicic acids, Clay, *Ores, *Cleaning.

Physics of the Atmosphere

Gushchin, G. P.
OPTICAL DETERMINATION OF THE CONCENTRATION OF WATER DROPS IN THE ATMOSPHERE DEPENDING ON THE RADIUS. 25 Feb 63 [19]p. 8 refs. FTD-TT-62-1803; AD-401 732.
Order from OTS or SLA $1.60 63-19197

Unedited rough draft trans. of mono. Aktinometriya i Atmosfernaya Optika, Leningrad, 1961, p. 218-227.

DESCRIPTORS: *Aerosols, *Spectrographic analysis, Water, Drops, Atmosphere, Distribution, Equations, Optical analysis.

Starting from Mie's law and using the numerical values of the scattering function for water, a system of linear equations determining for n wavelengths the extinction caused by a mixture of droplets with n different radii is given. After solving the system of equations all n of the concentration corresponding to n radii were obtained. In spite of the fact that the system of equations is given for droplets of pure water it is shown that it can be used with sufficient accuracy for droplets with a refractive index up to 1.4. (Author)

Lavrova, E. V.
GEOGRAPHIC DISTRIBUTION OF IONOSPHERIC DISTURBANCE IN THE F2 LAYER, tr. by E. R. Hope. Apr 63 [11]p. 4 refs. DSIS T 384 R.
Order from NRCC NRCC C-4393

Trans. of [Akademiya Nauk SSSR]. I[nstitut] Z[emnogo] M[agnetizma] I[onosfery i] Ra[sprostraneniya Radiovoln]. Trudy, 1961, no. 19(29) p. 31-43.

DESCRIPTORS: *Ionospheric disturbances, *Magnetic storms, Radiofrequency interference, Distribution, Ionosphere, Maps, Graphic analysis, Geography.

Shapiro, B. S. and Laikhova, L. N.
COMPILATION OF PREDICTIONS OF THE GEOMETRIC PARAMETERS AND THE h'f FREQUENCY-HEIGHT CURVES OF THE IONOSPHERE [AND] A SHORT-RANGE PREDICTION OF THE STATE OF THE IONOSPHERE. 14 Feb 63 [109]p. 64 refs. FTD-TT-62-1330; AD-298 207.
Order from OTS or SLA $9.10 63-19095

Unedited rough draft trans. of Akademiya Nauk SSSR. Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln. Trudy, 1960, no. 17(27) p. 216-281.

DESCRIPTORS: *Ionosphere, *Frequency, *Height finding, *Curve fitting, *Mathematical prediction, *Geometric forms, Electron density, Electromagnetic wave reflections, Radio waves, *Ionospheric disturbances, Terrestrial magnetism, Solar disturbances, *Correlation techniques, Ionospheric propagation.

Seismology

PROBLEMS OF THEORETICAL SEISMOLOGY AND PHYSICS OF THE EARTH'S INTERIOR (Voprosy Teoreticheskoi Seismologii i Fiziki Zemnykh Nedr) tr. by Z. Lerman. 1963, 148p. 125 refs. PL-480 NASA; NASA TT F-123.
Order from OTS $1.50 63-11178

Trans. of Akademiya Nauk SSSR. Institut Fiziki Zemli. Trudy, 1960, no. 11(178) [178p.].
##Another trans. of p. 121-132 is available from OTS $1.60 as 61-21433, JPRS-6918, 21 Mar 61, 13p.

DESCRIPTORS: *Earthquakes, Statistical analysis, *Turbulence, *Diffusion, Viscosity, Moon, Magnetic field, *Equations of state, Metals, *Heat transfer, *Gravity anomalies, *Helium, Phase studies, Functional analysis, *Elasticity, Seismic waves, *Mechanical waves, Propagation. Geophysics.

Contents:
On the statistical theory of nonhomogeneous turbulence, by B. I. Davydov
Effects of pressure on diffusion coefficients in solids, by V. N. Zharkov
Viscosity of the interior of the earth:diffusion processes and diffusion viscosity of the earth's mantle, by V. N. Zharkov
Can the moon sustain a magnetic field by hydromagnetic amplification? by V. N. Zharkov and F. R. Ulinich
An equation of state for some metals at high pressure, by V. A. Kalinin
Heat transfer by excitons in the earth's mantle, by E. A. Lyubimova

Interpretation of the main gravity anomalies of the earth, by V. A. Magnitskii
Transition of solid helium to the metallic phase at high pressure, by V. P. Trubitsyn
Functional methods in the linear ideal theory of elasticity, by B. M. Naimark
##Generalization of data on earthquake mechanisms, by V. I. Keilis-Borok and G. I. Pavlova
Spherical waves in an inhomogeneous fluid, by V. I. Keilis-Borok and others
Waves in an inhomogeneous fluid, by V. A. Kalinin
Stress-field variation in earthquakes, by G. I. Pavlova
Longitudinal and transverse plane waves in an infinite Maxwell medium, by E. N. Bessonova.

Kravtsov, G. S.
DETERMINATION OF AVERAGE VELOCITIES FROM HODOGRAPHS OF REFRACTED WAVES. [1962] [8]p. 8 refs. VESIAC-3506.
Order from OTS or SLA $1.10 62-33493

Trans. of [Geologiya i Geofizika] (USSR) 1961, no. 1, p. 109-111.

DESCRIPTORS: *Seismic waves, Refraction, Velocity, Determination, Graphic analysis.

ENGINEERING

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 203 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 6 June 63, 25p. JPRS: 19597.
Order from OTS $0.75 63-31006

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, Control systems, Amplifiers, Viscosimeters, Analog computers, Harmonic analyzers, Data processing systems, Frequency, Transistors, Power plants (Establishments), Thermocouples, Automation, Dipole moments, Electrical impedance, Acoustics, Medical equipment, Triodes, Diodes, Photographic emulsions, Ionosphere, Radio waves, Semiconductors, Test methods, Germanium, Circuits, Color television, Rectifiers, Frequency analyzers, Microwaves, Magnetrons, Dielectrics, Communication systems, *Czechoslovakia.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 215 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 18 June 63, 21p. JPRS: 19708.
Order from OTS $0.75 63-31053

Consists of abstracts of articles from selected scientific and technical journals of East Germany and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, Education, Data processing systems, Atomic clocks, Oscillographs, Voltage dividers, Low-pass filters, Networks, Circuits, Radio equipment, Pulse analyzers, Diodes, Magnetic cores, Relays, Transformers, Telephone equipment, Telegraph equipment, Acoustics, Waveguides, Filters (Electromagnetic waves), Capacitors, Space communication systems, Radio stations, Batteries and components, Television stations, Education, *East Germany, *Poland.

Basharin, S.
"KERCHENSKII ARTEK" [AND] STARTING THE OPERATION OF THE BLACK SEA MINE. 27 May 63, 8p. (photos omitted). JPRS: 19426.
Order from OTS $0.50 63-21926

Trans. of mono. Kerchenskaya Ruda (Kerch' Ores) Simferopol, 1960, p. 89-96.

DESCRIPTORS: *Iron, *Ores (Metal Sources), Deposits, Black Sea, *Mining engineering.

Muragin, E. P.
IN DEFENSE OF CERTAIN CONDITIONS IN THE DESIGNING OF FISHING TRAWLERS. [1962] [10]p.
Order from OTS or SLA $1.10 63-15126

Trans. of Rybnoe Khozyaistvo (USSR) 1960 [v. 36] no. 11, p. 27-33.

DESCRIPTORS: *Boats, *Ships (Nonmilitary), Fishes, Design, Effectiveness, *Marine engineering.

Aeronautical Engineering

ANNUAL AVIATION AND ASTRONAUTICS CONFERENCE IN ISRAEL (NO. 5). 21 May 63, 9p. JPRS:19308.
Order from OTS $0.50 63-21872

Trans. from Lamerhav (Israel) 1963, 27 Feb, p. 7; Haboker (Israel) 1963, 28 Feb, p. 1-2.

DESCRIPTORS: *Conferences, *Aeronautics, *Astronautics, *Israel.

Contents:
Experts at aviation and astronautics conference, by Meir Hareuveni Lectures
Conference opens on aviation and space flights
Air transport committee; Mach-2plane
Spraying flights
Wind energy
From a border settlement to astronautics.

NEWS OF SCHOOLS OF HIGHER EDUCATION. AERONAUTICAL ENGINEERING, 1962, VOL. 5, NO. 2: SELECTED ARTICLES. 1 Mar 63 [43]p. 5 refs. FTD-TT-62-1644; AD-400 521.
Order from OTS or SLA $4.60 63-19513

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962 [v. 5] no. 2, p. 65-71, 113-133, 138-151.

DESCRIPTORS: *Aeronautics, *Engineering, Stability, Cylindrical bodies, *Thermal stresses, *Test methods, *Turbine parts, *Axial-flow turbines, *Fuel consumption, *Turbojet engines.

Contents:
Stability of a circular cylindrical envelope in a non-uniform temperature field, by V. V. Kabonov
A method of projecting and the results of investigating a vaneless deflector for radial-axial turbines, by A. V. Gubarev and others
Characteristic throttling features of single-shaft bypass turbojet engines in different control programs, by A. L. Klyachkin and A. G. Smirnov.

Jakowlew, A.
AIRCRAFT OR ROCKET? 20 Apr 62 [8]p.
FTD-TT-62-404; AD-280 941.
Order from OTS or SLA $1.10 63-15921

Unedited rough draft trans. of Deutsche Flugtechnik (East Germany) 1961, v. 5, no. 11, p. 418-419 (originally pub. in Krasnaya Zvezda (USSR) 1961, 12 July).

DESCRIPTORS: *Aeronautics, *Rocket research, Aircraft, Spacecraft, Design.

Krivosheev, V. and Semenov, Bor.
TWO STAGES INTO THE SKY. 11 Mar 63 [8]p.
FTD-TT-62-1673. AD-400 555.
Order from OTS or SLA $1.10 63-19201

Unedited rough draft trans. from Izvestiya (USSR) 1962, 16 Sep, 1p.

DESCRIPTORS: *Aircraft, *Supersonic flight, High altitude, Velocity, Pilots.

An account of speed (2500 k/hr) and altitude (22,689 m.) records set by P. Ostapenko flying a Ye-166 aircraft.

Kurtz, O. and Schmidt, F.
LONG DISTANCE HIGH ALTITUDE FLIGHT WITH DIESEL ENGINES AND EXHAUST GAS TURBO-CHARGERS (Höhenfernflug mit Dieselmotor und Abgasturbolader). [1963] [14]p.
Order from SLA $1.60 63-10992

Trans. of paper from German Aviation Laboratory, Berlin-Aldershof, 30 Nov 35.

DESCRIPTORS: Flight, High altitude, *Diesel engines, *Turbosuperchargers, Construction, Theory, Experimental data, Airplane engines.

For the determination of the most suitable specifications for the construction of a mobile research exhaust turbine setup, theoretical and experimental investigations were performed. (Author)

Zavodsky, Karel.
VHF COMMUNICATIONS IN AIR TRANSPORTATION. 29 May 63, 11p. JPRS: 19480.
Order from OTS $0.50 63-21949

Trans. of Letecky Obzor (Czechoslovakia) 1962 [v. 6] no. 12, p. 390-392.

DESCRIPTORS: Air transportation, Communication systems, *Radio communication systems, *Very high frequency, Radio waves, Propagation, Geography.

Basic characteristics of VHF communications, geographical separation of VHF stations; and, systems of VHF communications for long distances.

Chemical Engineering

[A DISC TYPE CELL FOR SODIUM PRODUCTION]. Excerpt from a Conference on Sodium. [1963] [2]p.
Order from SLA $1.10 63-10960

Trans. from unidentified mono., n.p., n.d.

DESCRIPTORS: *Sodium, Production, *Electrolytic cells, Design, Disks, Electrochemistry.

PROCESS FOR THE PREPARATION OF CHLORINE BY THE REACTION OF HYDROGEN CHLORIDE WITH OXYGEN [Verfahren zur Herstellung von Chlor durch Umsetzung von Chlorwasserstoff mit Sauerstoff]. [1963] 4p. (fig. omitted).
Order from OTS or SLA $1.10 63-10974

Trans. of German patent application [1 67,946 IVb/12i, Oct 40, supplement to] patent application I 66,695 IVb/12i, by [I. G. Farbenindustrie A.G., Ludwigshafen] (PB-68 459).

DESCRIPTORS: *Chlorine, Preparation, *Hydrogen compounds, *Chlorides, *Oxygen, Chemical reactions, *Towers (Chemistry), Design.

The patent concerns a process for the preparation of chlorine by the reaction of HCl gas with oxygen or oxygen-containing gases in the presence of catalytically active molten chlorides, with partial condensation of the reacted gases which contain water and recycling of the condensate into the reaction vessel so that the reacted gases are brought into intimate contact with the condensate. The device for carrying out the process consists of a vessel inserted between the reaction vessel and the cooler (which brings about partial condensation) which is provided with packing, a bell bottom or sieve bottom, and is fed by the condensate containing the reacted gases. (Author)

PROCESS FOR THE SEPARATION OF FLUORINE AND ALUMINUM IN THE SOLUTIONS OBTAINED BY TREATING RAW PHOSPHATE WITH ACIDS. [1963] [7]p.
Order from OTS or SLA $1.10 63-14519

Trans. of French patent 791,296, gr. 14, cl. 1, filed 14 June 35, issued 23 Sep 35, pub. 6 Dec 35, filed in Germany 14 July 34, by Kunstdünger-Patent-Verwertungs A.G., Switzerland.

DESCRIPTORS: Acids, *Phosphates, Solutions, *Aluminum, *Fluorine, Separation.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 71. 22 May 63, 51p. JPRS: 19333.
Order from OTS $1.50 63-21886

Trans. of Ukraina (USSR) 1963, no. 4, p. 20-21; and 17 selected articles from Feb-Mar 63 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Chemical industry, *Carbon black, Synthetic fibers, *Industrial plants, Construction, *Coal, *Shales, Deposits, Petroleum, *Lactams, *Mining engineering, Phosphorites, Polyester plastics, Glass textiles, *Composit materials, *Herbicides, Fertilizers, Distribution (Economics), Polyvinyl chlorides, Tires, Vulcanization.

Contents:
Expedite the production of granulated carbon black at the Kudinovo plant, by S. Suliev
Building the second fiber plant in Barnaul, by A. Vasil'ev and A. Illarionov
Developing the Kenderlyk coal and shale deposits, by M. Nikolaev
Expedite the construction of the Navoi chemical combine
Expedite the construction of the Sumgait petrochemical combine, by A. Mamedov
Building the Volga chemical combine, by B. Smirina and N. Barskii
Production of caprolactam is expanded at Novo-Kemerovo
How caprolactam began to be produced at the Novo-Kemerovo combine, by N. Vdovin
Expedite the construction of the Kingisepp phosphorite mine, by I. Barbotin
Troubles with building the Kingisepp phosphorite mine, by V. Zubarev
Production of caprolactam is to be started at Rustavi, by B. Mshvenieradze and others
Starting the production of caprolactam at Rustavi, by B. Mshvenieradze and others
The project for producing caprolactam at Rustavi, by B. Mshvenieradze and others
Production of caprolactam at Rustavi, by B. Mshvenieradze and others
Designing equipment for production of plastic glass sheets, by P. Poznyak
A new weed-killer
Deliveries of mineral fertilizer
Equipment for the manufacture of polychlorvinyl linoleum and the new vulcanization process of tires.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 74. 27 May 63, 46p. JPRS: 19432.
Order from OTS $1.25 63-21930

Trans. of Planovoe Khozyaistvo (USSR) 1963 [v. 40] no. 3, p. 1-10; and from Ekonomicheskaya Gazeta (USSR) 1963, no. 12[85], 23 Mar, p. 2, 5, 6, 9.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Plastics industry, Power supplies, Science, Scientific research, Laboratories, Scientific personnel, *Automation, Training, Education.

Contents:
Important questions in the development of the plastics industry, by N. Fedorenko and I. Yakovlev
Chemical plants under construction in the Kuzbass are not being provided with power sources for their operation
The role of science in the development of the chemical industry
Better organization and coordination of scientific research work in chemical industry needed
Problems in the financing of scientific research in chemical industry
Shortening the path from laboratory experiments to industrial production
Discussion on means of assistance to scientific investigators
Discussion of introduction of automation
More attention needed for the training specialists in chemistry.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 78. 18 June 63, 34p. JPRS: 19709.
Order from OTS $1.00 63-31054

Trans. from Komsomol'skaya Znamya (USSR) 1963, 9 Mar, p. 2; Ekonomicheskaya Gazeta (USSR) 1963, no. 10[83] p. 11; ##no. 11[84] p. 3; no. 12[85] p. 16-20; Izvestiya (USSR) 1963, 8 Mar, p. 3.
##Another trans. is available from OTS $0.50 in 63-21766, JPRS-19708, 7 May 63, 9p.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Labor, Personnel management, *Industrial procurement, *Plastics, *Economics.

Contents:
A model brigade at the Lisichansk combine, by V. Komarovskaya
A proposed remedy for labor turnover, by P. Zavyal'skii
Obstacles to the growth of a large scale chemical industry, by D. Bodrov
##Recommendations to facilitate the increased use of plastics, by N. Egorov
Business club discussions on better utilization of capital investments, by P. Kazakov and P. Styrov.

Aerov, M. E.
THE HYDRAULIC RESISTANCE OF A FIXED GRANULAR BED. Apr 63, 5p. 25 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 10, p. 9-[15].

DESCRIPTORS: *Hydraulic research, Resistance, Packing materials, Fluid flow, Pressure, Heat transfer, Chemical engineering.

Anokhin, V. N., Mukhlenov, I. P. and others.
INVESTIGATION ON THE AMMONIA SYNTHESIS IN A SUSPENDED CATALYST LAYER. [1963] 8p. 23 refs.
Order from OTS or SLA $1.10 63-14322

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1962, v. 35 [no. 1] p. 37-42.

DESCRIPTORS: *Ammonia, Synthesis, Reaction kinetics, Temperature, Pressure, *Catalysts, Iron compounds, Particles, *Towers (Chemistry).

Relationship of the reaction rate of ammonia synthesis in a suspended layer of catalyst with the temperature satisfies the equation of Arrhenius. The activation energy for a ferric, tetrapromoted catalyst was equal to 41,000 kcal/kg-mole. The process rate constant in the suspended layer is space-velocity independent, as in the immobile catalyst. The influence of particle size in the studied catalyst on the reduction of ammonia synthesis velocity appears with the $d_{av} \geqslant 4.0$ mm. and is greater for higher pressures and temperatures. The effect of linear velocity of the gas on the ammonia synthesis is analogous to the effect of velocity in earlier studied catalytic processes in suspended layers of catalysts. Mixing degree raises with increasing linear velocity, which leads to a drop of the process rate. (Author)

Baskakov, A. P.
THE EFFECT OF MIXING OF A MATERIAL IN A FLUIDIZED BED UPON HEAT TRANSFER BETWEEN A GAS AND PARTICLES. 1 Mar 63 [13]p. 16 refs. MCL-1289; AD-299 628.
Order from OTS or SLA $1.60 63-19508

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 9, p. 10-16.

DESCRIPTORS: *Fluidized solids, Mixtures, Gas flow, Particles, *Heat transfer, Heat exchangers.

The effect of the degree of mixing of a material upon the average temperature difference between it and a pseudoliquefying agent (a gas) is examined. A conclusion is made about the ideal (in practice) mixing of a fluidized bed in industrial apparatus, and also about the impossibility of obtaining a countercurrent scheme in a fluidized bed on a single-hearth furnace, regardless of the place of introduction of the material. (Author)

Bergo, B. G., Platonov, V. M., and Monko, Ya. D.
ANALYSIS OF RECTIFICATION SYSTEMS USING SECTIONAL COLUMNS. Apr 63, 4p. 5 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimiya i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 12, p. 1-[5].

DESCRIPTORS: Chemical engineering, *Purification, *Distillation, Methanes, Ethylenes, Hydrocarbons, Temperature, Computers, Numerical analysis.

Boiangiu, T. and Goldenberg, N.
RIGID COMPOUNDS FROM POLYVINYL CHLORIDE AND BUTADIENE-ACRYLONITRILE RUBBER. Apr 63, 6p. 11 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Revista de Chimie (Rumania) 1962 [v. 13] no. 8, p. 465ff.

DESCRIPTORS: Chemical engineering, *Polyvinyl chloride, Vinyl plastics, Thermoplastics, *Butadienes, *Acrylonitriles, *Rubber, Solubility, Chemical bonds, Elasticity, Tensile properties, Stearater, Antioxidants, Lubricants, Polymerization.

Büchen, W.
PURIFICATION OF ALUMINUM MELTS WITH CHLORINE GAS IN THE FOUNDRY. [1963] 22p. (figs. omitted) 23 refs.
Order from SLA $2.60 63-14150

Trans. of Giesserei (West Germany) 1952, v. 39, no. 19, p. 491-498.

DESCRIPTORS: Foundries, *Gases, *Chlorine, Melting, *Aluminum, Purification, Casting, Safety, Refineries.

After introductory characterization of the purpose of the work, the specific details of a use of chlorine gas were discussed in connection with the presentation of the necessity for a refining of aluminum melts for high grade casting, and the primary reactions taking place in it, which lead to aluminum and magnesium chloride formation are discussed in detail as regards their principles and their course, and secondary refining effects which occur are explained in detail. The make-up of chlorinating installation for the practice resulting from the consideration of the significant influence magnitudes was described in detail and safety measures, waste conditions and other industrially important questions were reported on. From the presentations, it can be seen that the use of a chlorination for the purification of aluminum melts in foundries must be considered as very effective and also safely executable in operation. (Author)

Chertkov, B. A.
THE INFLUENCE OF SO_2 CONCENTRATION IN A GAS ON ITS RATE OF ABSORPTION BY DIFFERENT SOLVENTS (Vliyanie Kontsentratsii SO_2 v Gaze na Skorost' Ego Pogloshcheniya Razlichnymi Rastvorami). Apr 63 [16]p. 16 refs. RTS-2237.
Order from OTS or SLA $1.60 63-19136

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1959, no. 7, p. 586-591.

DESCRIPTORS: *Mass transfer, *Sulfur compounds, Dioxides, Gases, Absorption, Solutions, Ammonium compounds, Sulfites, Sodium compounds, Carbonates, Hydroxides.

It was established that, in the absorption of SO_2 from dilute gaseous mixtures, the mass transfer coefficient remains constant as the original SO_2 concentration

changes from 0.08 to 3.5% by volume, if all the other absorption conditions remain unchanged. At higher original SO_2 concentrations (up to 8% by volume) a continuous decrease of mass transfer coefficient is observed, because of the fact that the overall rate of the process begins to be limited by the rate of hydration of SO_2 in the liquid phase. For the absorption of SO_2 by solutions of ammonium sulphite-bisulphite, sodium carbonate and caustic soda of equal free chemical capacity, the mass transfer coefficient is approximately the same. (Author)

Gavanda, L[udwig].
SULFUR AND SULFURIC ACID FROM GYPSUM. [1963] 13p. 11 refs.
Order from SLA $1.60 63-14571

Trans. of Chem[isches] Forsch[ungs]inst[itut der Wirtschaft] Osterr[eichs]. Mitt[eilungen] (Austria) 1949, v. 3, p. 70-73.
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-18327 [1960] 8p.

DESCRIPTORS: *Sulfur, *Sulfuric acid, *Gypsum, *Pyrolysis, Coal, Silicon compounds, Oxides, Reduction (Chemistry), Aluminum compounds.

Decomposition of gypsum by heating; decomposition of gypsum in presence of coal; decomposition of gypsum in presence of SiO_2; decomposition of gypsum in presence of Al_2O_3; decomposition of gypsum or anhydrite with addition of coal, silica, and alumina.

Gol'dberg, N. A. and Al'tshuler, L. N.
THE MACROSCOPIC KINETICS AND MECHANISM OF THE SYNTHESIS OF UREA FROM AMMONIA AND CARBON DIOXIDE. Apr 63, 5p. 12 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 9 [p. 638-641].

DESCRIPTORS: Chemical engineering, *Urea, Amides, Carbamates, Esters, Cyano radicals, *Ammonia, *Carbon dioxide, Oxides, Pressure, Temperature, Synthesis (Chemistry), *Reaction kinetics.

Greguss, P.
CRITICAL NOTES ON THE APPLICABILITY OF ULTRASOUND TO CHEMICAL TECHNOLOGY. Apr 63, 15p. 218 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Magyar Kemikusok Lapja (Hungary) 1962 [v. 17] no. 11, p. 494ff.

DESCRIPTORS: *Chemical engineering, *Ultrasonics, Cavitation, Polymerization, Plastics, Polyester plastics, Phenols, Formaldehyde, Crystallization, Colloids, Coagulation, Chemical reactions, Economics.

Holemann, P. and Hasselmann, R.
ACETONE CONTENT OF THE GAS PHASE OVER SATURATED ACETYLENE SOLUTIONS. [1962] 11p. 6 refs.
Order from SLA $1.60 62-20062

Trans. of Chem[ie]-Ing[enieur]-Techn[ik] (West Germany) 1953, v. 25, no. 12, p. 735-737.
Another trans. is available from SLA as 57-02008, 9p.

DESCRIPTORS: Solutions, *Acetylenes, Vapor pressure, Phase studies, Solubility, *Acetones.

Equations are given, which make it possible to calculate the average acetone content of cylinder gas, and also the acetone losses which occur when gas is withdrawn from acetylene cylinders. Only after the determination of more exact values of the acetone content in the acetylene in the equilibrium state will it be possible to draw conclusions, to what extent actual conditions approach a state of equilibrium and which part is played by the lowering of temperature. For this reason, the determination of the solubility of acetylene in acetone was supplemented by measurements of the acetone content of the acetylene in the gas phase as a function of pressure and temperature.

Ievleva, Z. V. and Tesner, P. A.
ACETYLENE FORMATION DURING INCOMPLETE METHANE COMBUSTION IN OXYGEN. [1963] 5p. 4 refs.
Order from OTS or SLA $1.10 63-14334

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1957, v. 115 [no. 3] p. 537-540.

DESCRIPTORS: *Acetylenes, *Methanes, *Oxygen, *Combustion, Pyrolysis, Tests, Natural gas, Oxidation.

Il'in, D. T. and Eremin, E. N.
PYROLYSIS OF GASOLINE VAPOR TO ACETYLENE AND OLEFINS IN A WATER VAPOR-WATER PLASMA. Apr 63, 2p. 1 ref.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Moscow U. Vestnik. [Seriya 2: Khimiya] (USSR) 1962 [v. 17] no. 6, p. 41-[42].

DESCRIPTORS: Chemical engineering, *Pyrolysis, *Water vapor, *Gasoline, *Acetylenes, Hydrocarbons, *Ethylenes, Electric arcs, Plasma physics.

Itkina, D. Ya., Minovich, M. A., and Nazarova, T. I.
DECOMPOSITION REACTION RATE OF AMMONIUM NITRITE SOLUTIONS. [1963] 6p. 8 refs.
Order from OTS or SLA $1.10 63-14331

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1962, no. 35, no. 1, p. 43-47.

DESCRIPTORS: *Ammonium compounds, *Nitrites, Solutions, Decomposition, Reaction kinetics, Stabilization, *Carbonates, Storage, Transportation.

The data found on decomposition reaction rate of comparatively concentrated ammonium nitrite solutions (up to 330 g./L.), stabilized with a small amount of ammonium carbonate-bicarbonate demonstrated that loss of tied nitrogen in manufacture, storage and transportation of these solutions can be reduced to small values. Presence of ammonium carbonate-bicarbonate in quantity of some 10 g./L. (to ammonia) and maintenance of a temperature below 20 C permit prevention of ammonium nitrite solutions decomposition, at a content up to 280 g./L. of NH_4NO_2. These two factors, combined with a corresponding structural shaping of the process, assure safety of production, storage and transportation of comparatively concentrated ammonium nitrite solutions. (Author)

Kaganov, S. A., Levinter, M. Kh., and Medvedeva, M. I.
KINETICS OF ASPHALTENE COKING. Apr 63, 4p. 6 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1962 [v. 7] no. 7, p. 38-[43].
Another trans. is available from ATS $10.00 as ATS-28P65R [1962] 8p.

DESCRIPTORS: Chemical engineering, *Reaction kinetics, *Coke, *Asphalt, Benzenes, Hydrocarbons, *Bitumens, Pentanes, Oils, Resins.

Malyusov, V. A., Zhavoronkov, N. M. and others.
INVESTIGATION OF THE EFFECTIVENESS OF REGULAR PACKINGS IN THE RECTIFICATION OF WATER. Apr 63, 12p. 18 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 7 [p. 519-529].

DESCRIPTORS: *Purification, *Distillation, *Water, Effectiveness, Packing materials, Design, Hydrodynamics, Mass transfer, Resistance, Pressure, Velocity, Temperature, Chemical engineering.

Markov, S. S. and Valikova, E. V.
ANALYTICAL PRODUCTION CONTROL IN THE NITROGEN INDUSTRY: SELECTED PART. 13 Feb 63 [140]p. 3 refs. FTD-TT-62-1808. AD-299 676
Order from OTS or SLA $10.50 63-19087

Unedited rough draft trans. of mono. Analiticheskii Kontrol' Proizvodstva v Azotnoi Promyshlennosti, [Moscow] 1960, 229p.

DESCRIPTORS: *Chemical industry, *Nitrogen, Production, Control, *Nitric acid, Nitrogen compounds, Oxides, Oxidation-reduction reactions, Weight, Density, Determination, Volumetric analysis, Electrolytic titration.

An account of methods for analyzing concentrated nitric acid, liquid nitrogen oxides (their homogeneous and layering mixtures) with the use of the redox potential of the system $HNO_3 - N_2O_4 - H_2O$. Methods for measuring this potential are described, and extensive tables are included.

Molokanov, Yu. K.
HYDRAULIC RESISTANCE OF GRID AND PERFORATED TRAYS OF THE DOWNFALL TYPE. Apr 63, 4p. 10 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 4, p. 291-[294].
Another trans. is available from ATS $9.85 as ATS-50P63R [1962] 7p.

DESCRIPTORS: Chemical engineering, *Hydraulic research, Resistance, *Conveyors, Porosity, Fractionation, Absorption (Physical), Cooling, Purification.

Richter, Adolf.
RESIDUAL CONTENT IN DISSOLVED SUBSTANCES ATTAINABLE IN WATERS TREATED WITH ION EXCHANGERS. 18 June 62, 15p. (figs. omitted) 10 refs.
Order from SLA $1.60 63-14093

Trans. of Vom Wasser (West Germany) 1959, v. 26, p. 241-257.

DESCRIPTORS: *Ion exchange, *Desalination, *Water, Purification, *Water supplies, Water filters.

Sakhanov, A. N. and Tilicheev, M. D.
INVESTIGATION OF THE CRACKING PROCESS. [1963] [64]p. 30 refs.
Order from OTS or SLA $6.60 63-10416

Trans. of Russian language article from unidentified source, n.d.

DESCRIPTORS: *Petroleum, *Decomposition, *Pyrolysis, *Distillation, Hydrocarbons, Coal, Shale, Gasoline.

Selivanov, L. M.
EQUATION FOR CALCULATING THE NUMBER OF ACTUAL PLATES IN A FRACTIONATING COLUMN ON COMPUTERS. Apr 63, 4p. 3 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of A[kademiya] N[auk] SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izvestiya: Met[allurgiya] i Toplivo, 1962, no. 5, p. 227-[232].

DESCRIPTORS: *Distillation, *Computers, Mass transfer, Reaction kinetics, Industrial equipment, Design, Chemical engineering.

Sokolinskii, Yu. A.
CALCULATION OF EQUILIBRIUM IN THE SYNTHESIS OF AMMONIA WITH THE AID OF COMPUTERS. Apr 63, 4p. 7 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 6 [p. 410-413].
Another trans. is available from ATS $9.50 as ATS-89Q67R [1962] 6p.

DESCRIPTORS: Chemical engineering, *Numerical analysis, *Computers, *Synthesis (Chemistry), Hydrogen, Nitrogen, *Ammonia, Pressure, Temperature, Methanes, Argon, Hydrocarbons.

Solomakha, G. P. and Planovskii, A. N.
THE RELATIONSHIP BETWEEN MASS TRANSFER IN THE GAS PHASE AND BUBBLE HYDRAULIC PARAMETERS (BUBBLE-CAP AND DRIP PLATES). Apr 63, 5p. 13 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 10, p. 1-[8].

DESCRIPTORS: Chemical engineering, *Mass transfer, Gases, *Phase studies, Liquids, Bubbles.

Teoreanu, I.
SOME CONSIDERATIONS ON THE STRUCTURE OF A FLUIDIZED BED. Apr 63, 12p. 16 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Institutul Politehnic, Bucharest. Buletinul (Rumania) 1962, v. 14, no. 1, p. 77ff.

DESCRIPTORS: *Fluidized solids, Heat transfer, Mass transfer, Dynamics, Particles, Gases, Velocity, Weight, Pressure, Structures, Chemical engineering.

Tsyplyatnikov, G. P. and Aleskovskii, V. B.
A THERMOCHEMICAL GAS ANALYZER FOR CONTINUOUS DETECTION OF OXYGEN. 8 Jan 63 [18]p. 5 refs. FTD-TT-62-1554.
Order from OTS $0.50 63-11620

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1960, v. 3, no. 3, p. 550-559.

DESCRIPTORS: *Oxygen, Detection, *Gas analysis, *Thermocouples, *Platinum, *Iridium alloys, Platinum alloys, Hydrogen, Combustion, *Thermochemistry.

A working model of a thermochemical gas analyzer for continuous detection of oxygen in gaseous mixtures containing up to 10% O_2 has been constructed and tested under laboratory conditions. The action of the gas analyzer is based on using the relationship of the emf of a platinum and iridium platinum thermocouple, on which flameless hydrogen combustion occurs at a temperature in the gaseous medium of 250-300° because of the oxygen in the gas to be analyzed to the oxygen concentration. The research data may be used for developing an automatic gas analyzer for continuous detection of oxygen directly in a stream of hot gas. (Author)

Usov, Yu. N., Skvortsoca, E. V. and others.
POLYMERIZATION OF THE BUTANE-BUTENE FRACTION OF THE CRACKING GAS ON A PHOSPHORIC ACID FILM CATALYST. [1963] 5p. 4 refs.
Order from OTS or SLA $1.10 63-14313

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1962, v. 35 [no. 5] p. 1148-1150.

DESCRIPTORS: *Natural gas, Decomposition, *Butanes, *Butenes, Polymerization, *Catalysts, *Phosphoric acids, Films, *Quartz, *Sand, Fluorides.

During testing of the polymerizing capacity of a series of phosphoric acid film catalysts for the process of diisobutylene production from B. B. fraction of cracking gas, it was found that the active carrier of the film is produced from veinous quartz, or coarsely granulated sand, preliminarly treated with hydrofluoric acid. The optimal course of the polymerization process of B. B. fraction on the film catalyst, and the conditions for the latter regeneration, were developed. It was shown, that in long work at the optimal course the polymerizing capacity of the catalyst, prepared on the basis of veinous quartz, reaches the level of the industrial catalyst, which leads to practically equal process characteristics. This gives a reason for recommendation of the indicated catalyst in industrial applications. (Author)

Civil Engineering

DESIGN OF STRUCTURES. Synthesis of the discussions at a scientific Conference held in Moscow, 1-10 Dec 58 under the auspices of the International Building Council (Conseil International du Bâtiment). [1960] [36]p.
Order from SLA $3.60 60-1687'

Trans. of [Comité Européen du Béton. Bulletin d'Information] (France) 1958, no. 10.

DESCRIPTORS: *Structures, *Reinforced concrete, Design, Mechanical properties, Scientific organizations, Loading (Mechanics), *Research program administration, Scientific personnel, *Civil engineering.

Contents:
Limit design of reinforced and prestressed concrete structures, by A. A. Gvozdev
Expose of working methods of the Comité Européen du Béton, by Franco Levi
Resolution
Plan of distribution of studies and research concerning improvement of methods of structural design among scientific organizations, scientists, members of the committee.

Blekhman, I. I.
AN INVESTIGATION OF THE PROCESS OF VIBRATIONAL DRIVING OF PILES AND SHEET PILES. [1963] 12p.
Order from ATS $12.75 ATS-09Q69R

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Mekh[aniki]. Inzh[enernyi] Sb[ornik] 1954, v. 19, p. 55-64.

DESCRIPTORS: *Civil engineering, Construction, Vibration, *Beams (Structural), Sheets, Metal plates, Foundations (Structures)

Chinenkov, Yu. V.
STUDY OF THE BEHAVIOR OF REINFORCED CONCRETE ELEMENTS IN COMBINED FLEXURE AND TORSION. [1962] [32]p.
Order from OTS or SLA $3.60 63-10200

Trans. of Akademiya Stroitel'stva i Arkhitektury SSSR. Institut Betona i Zhelezobetona [Perovo]. Trudy, 1959, v. 5, p. 29-53.

DESCRIPTORS: *Reinforced concrete, Deformation, Torque, Structures, Mathematical analysis, Mechanical properties, *Loading (Mechanics), Tests.

Wischers, G[erd].
EFFECT OF TEMPERATURE VARIATION ON THE STRENGTH OF CEMENT STONE AND MORTAR. [1962] [101]p. 55 refs.
Order from SLA $9.10 63-10193

Trans. of Schriftenreihe der Zementindustrie (West Germany) 1961, no. 28, 117p.

DESCRIPTORS: *Cement, *Concrete, Temperature, Tensile properties, Compressive properties, Sand, Gravel, Structures, Mathematical analysis.

Electrical and Electronic Engineering

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] no. 2(275). 23 May 63, 157p. JPRS: 19353.
Order from OTS $3.00 63-21893

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 2(275).

DESCRIPTORS: *Communication systems, *Communication equipment, Telephone communication systems, Electronics, Engineering, Economics, Personnel management, Telegraph systems, Labor unions, Semiconductors, Manufacturing methods, Radio broadcasting, Radio stations, Interference, Preamplifiers.

Contents:
Instructors of long distance telephone office operation are upgrading their qualifications, by E. M. Tikhonova
New equipment must be developed and adopted more rapidly (editorial)
Uninterrupted communication service for kolkhoz-sovkhoz administrations, by A. F. Aleksandrov
On the technical base of wire broadcasting and radio service, by I. A. Shamshin
In the interests of a production administration and rural population, by S. G. Volkov and L. Ya. Yakovlev
The pace of the development and improvement of city telephone service must be accelerated, by A. G. Serikov
Service communication equipment, by V. M. Belous and others
Methods of reducing the effect of radio stations on cable circuits, by M. A. Klimov
Preamplifier of a studio television channel, by A. L. Levin
Device for automatic connection of dial to opposite sets of the ATS VRS of different systems, by V. P. Smolenskii
To manage competently and judiciously, by A. I. Korotin
We are improving the work of telegraph office, by I. A. Shestopal
Experience of mechanization of work on a cable section, by E. I. Farfei
Advanced method in the work of mail carriers, by N. S. Gorina
More attention to young specialists, by V. V. Aleksandrov
Front-rank communication workers of Beloruesia are sharing their experience, by V. M. Chukovich
Gomel' television center is a Communist-labor enterprise, by L. L. Podorskii
To work wholeheartedly in Communist manner, by E. Z. Belen'kii
Semiconductor triodes and diodes, by B. S. Agafonov
Mechanization of production processes, by V. A. Bruker

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 3(275). 5 June 63, 156p. JPRS: 19583.
Order from OTS $3.00 63-21998

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 3(276).

DESCRIPTORS: *Communication systems, *Research program administration, *Electrical engineering, *Electronics, *Economics, Radio relay systems, Radio communication systems, Postal systems, Computers, Information theory, Telephone equipment, Radiofrequency amplifiers, Electric cables, Maintenance, Electron tubes, Facsimile transmission, Telegraph equipment.

Contents:
Work of trade-union organizations must be raised to the level of new tasks (editorial)
Postal service must be developed and improved in all possible ways, by O. K. Makarov
Communication facilities and computer technique help direct the industry, by N. V. Belkin and V. I. Zasypkin
Carrier-telephony equipment of the type KV-12, by M. P. Sobolev and N. E. Popova
Widening of the operating frequency range of ShAU-51, by A. M. Severin and A. I. Birman
Determination of the distance to the place of cable-insulation fault, by B. Z. Tomchin
Sources of economy in electron tubes, by P. E. Koval'chuk and others
Planning and the financial control at communications enterprises must be improved, by S. S. Strizhevskii
Unremitting attention for the delivery of mail, by S. G. Glinyanoi
The use of facsimile apparatuses for the elimination of flaws in the processing of telegrams, by M. I. Oksman and S. O. Mel'nik
Public supervision over the performance quality of communication workers, by A. N. Kudinov
Concern for efficient service to the population, by G. E. Mel'nikov
Considerate and thoughtful treatment of patrons, by T. I. Goncharov
Communications office in Alitus, by V. A. Putinas
Creative initiative, by S. G. Volkov and L. Ya. Yakovlev
A simplified cable finder. Results of the completion for the best suggestion in the field of postal-service mechanization, by K. G. Savalin
The training of postal workers at a polytechnic school, by P. K. Smigel'ski

NEWS ACADMEY OF SCIENCES OF THE USSR, DEPARTMENT OF TECHNICAL SCIENCES, POWER ENGINEERING AND AUTOMATION, 1962, NO. 1: SELECTED ARTICLES. 19 Feb 63 [32]p. 12 refs. FTD-TT-62-1720; AD-400 534.
Order from OTS or SLA $3.60 63-19202

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1962, no. 1, p. 133-137, 152-165.

DESCRIPTORS: Power, Engineering, *Automation, *Control systems, Automatic, Oscillation, *Adaptive control systems, Synthesis, Mathematical expectation, Vector analysis, Perturbation theory.

Contents:
Symmetrical one-frequency forced oscillations in nonlinear automatic control systems, by V. V. Pavlov
Principle of constructing self-adjusting systems, by V. A. Gordeev
About a type of self-adjusting control system, by V. I. Chernetskii and R. M. Yusupov.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIO ENGINEERING SERIES, 1962, VOL. 5, NO. 6. 24 May 63, 201p. JPRS: 19400.
Order from OTS $3.50 63-21909

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1962, v. 5, no. 6, p. 663-742.

DESCRIPTORS: *Radio, *Electronics, *Engineering, Radiofrequency pulses, Computers, Correlation techniques, Linear systems, Resistance, Capacitance, Noise, Transmission lines, Waveguides, Resistors, Printed circuits, Rectifiers, Dielectrics, Semiconductors, Trigger circuits, Radio receivers.

Contents:
Electronic machines for testing ultra high speed radio pulse digital elements, by M. S. Neiman
Construction of correlator based on the principle of a linear system with variable parameters, by Yu. Ya. Yurov and others
Calculation of the coupling resistance of periodic slow-wave systems, by K. Ya. Lizhdvoi and Ya. K. Trokhimenko
Capacitance of varicap and distribution of ionized impurities in its p-n junction, by A. I. Shestapalov and V. I. Samoilenko
Dependence of the noise factor of a transmission line on the structural parameters, by B. S. Ryabyshkin
Concerning the theory of phasochron instruments of type "O" with helical electron beams, by G. N. Rapoport and V. A. Zhurakhovskii
High-resistance printed resistors in high-frequency circuits, by Yu. P. Ermolaev
Voltage ripple in full wave rectifiers with capacitive filter, by Ya. I. Tetel'baum
Approximate calculation of the electric field in a dielectric with low dielectric constant, by A. S. Bondarev, and G. F. Semenov
Matching devices for a ridge-type slow-wave system, by L. M. Andrushenko and V. E. Chaika
Semiconductor flipflop with three stable equilibrium states, by E. A. Mel'nikov and A. F. Surdutovich
Influence of the form of the frequency characteristic of a selective system on the density of fluctuations at the output of the receiver, by V. G. Balitskaya

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 48. 22 May 63, 14p. JPRS: 19326.
Order from OTS $0.50 63-21881

Trans. from Zarya Vostoka (USSR) 1962, 7 Dec, p. 4; Sovetskaya Belorussiya (USSR) 1962, 4 Dec, p. 2; Izvestiya (USSR) 1963, 8 Jan, p. 1; Ekonomicheskaya Gazeta (USSR) 1963, no. 3[76] 19 Jan, p. 46, 48.

DESCRIPTORS: *Industrial production, *Electrical equipment, Industrial plants, Supplies, *Electric machinery, Generators, *Electric power production, Power plants, Sliding contacts, *Electric motors, Sewing machines.

Contents:
Tbilisi "Elektrosvarka" plant grows rapidly
Remedying deficiencies in the production of electrical equipment in the Belorussian SSR, by R. Fedoseenko and V. Kushner
Progress in power-generator design at the Novosibirsk turbogenerator plant, by V. Davydchenkov
Problems with the "KTV-34" contactors produced by the "Elektrokontaktor" plant in Ordhonikidze, by A. Filatov and E. Khadykin
The "MSh2" electric motor sold by the Khar'kov sewing machine plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 49. 28 May 63, 35p. JPRS: 19459.
Order from OTS $1.00 63-21940

Trans. of Vestnik Elektropromyshlennosti (USSR) 1963 [v. 34] no. 4, p. 1-3, 65; and from Sovetskaya Belorussiya (USSR) 1962, no. 270, 17 Nov, p. 2; Sovetskaya Moldaviya (USSR) 1962, no. 277, 25 Nov, p. 2-3; Vechernyaya Moskva (USSR) 1962, no. 275, 23 Nov, p. 1-2

DESCRIPTORS: *Industrial production, *Electrical equipment, Industrial plants, *Industrial training, *Conveyors, Automation, Labor, Laboratories, *Transformers.

Contents:
News of "Gomel' Kabel'" and "Elektroapparatura" plant, by A. I. Karabanov and others
New institute for directors of industrial and transport enterprises established in Minsk
New conveyer at Kishinev elektromashina plant, by L. Pavlov and Yu. Gusev
New equipment at machine-building and electrotechnical industry enterprises in Moldavian sovnarkhoz
Increased activity at the electro-plant imeni V. V. Kuibyshev, by V. Kopylov
Work of central plant laboratory of electric plant imeni V. V. Kuibyshev
Tasks of Soviet transformer building, by G. N. Petrov
Transformer production at Armenian electromechanical plant imeni V. I. Lenin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 50. 4 June 63, 36p. JPRS: 19558.
Order from OTS $1.00 63-21979

Trans. of Mashinostroitel' (USSR) 1963, no. 1, p. 19; Vestnik Elektropromyshlennosti (USSR) 1963 [v. 34] no. 2, p. 1-2, 8-13, 76-77; Standartizatsiya (USSR) 1963 [v. 27] no. 1, p. 39-40.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Vehicles, Electrical industry, *Generators, Power equipment, *Transformers, Hydroelectric power systems, Standards.

Contents:
Stand for testing the electrical equipment of motor vehicles, by A. Golubev
Prospects for developing the electrical industry of the Urals, by N. N. Pytel'
Conference on improving the production economics in the electrical industry of the Urals, by G. Kh. Iskhakov and V. M. Ermolaev
Hydroelectric generators built by the "Uralelektro-apparat" plant, by K. F. Kostin
Concerning standardization for the branches of the transformer-building industry, by V. D. Sanin.

Balyugin, I. E.
BREAKDOWN OF LIQUID INSULATING MATERIALS WHEN THE CURRENT IN THE DISCHARGE CHANNE IS LIMITED. [1962] 12p. (figs. tables omitted) 9 refs.
Order from OTS or SLA $1.60 63-10889

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1957, v. 27, no. 10, p. 2291-2302.

DESCRIPTORS: *Insulating materials, *Electric insulation, Liquids, *Decomposition, *Electric discharges, Xylenes, Hydrocarbons, *Oscillographs, Tests, *Dielectrics.

Buldakov, V. A., Zhirnova, G. V. and others.
COLOR TELEVISION MOTION PICTURE TELEVISOR WITH A CAMERA HAVING THREE VIDICONS [Telekinoperedatchik Tsvetnogo Televideniya s Kameroy na Trekh Vidikonakh]. [1963] 8p.
Order from ATS $10.25 ATS-74Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1960, v. 4, no. 11, p. 36-40.
Another trans. is available from OTS or SLA $1.60 as 61-11864, JPRS-7701, 3 Feb 61, 14p.

DESCRIPTORS: *Color television, Television equipment, Television transmitters, Motion picture projectors, Television cameras.

For abstract see Technical Translations 5: 620, 1961

Ginzburg, V. M. and Belova, I. N.
DESIGN OF ANTENNAS WITH COMPOUND EXCITER. 13 Feb 63 [40]p. FTD-TT-62-1520; AD-299 850.
Order from OTS or SLA $3.60 63-19438

Unedited rough draft trans. of mono. Raschet Paraboloicheskikh Antenn, "Sovetskoe Radio", 1959, chap. 3, p. 91-120.
A complete trans. of mono. is available from OTS or SLA $14.50 as 62-23794, USASIA Trans-1298 RR, 27 Mar 62 [220]p.

DESCRIPTORS: *Parabolic antennas, Antennas, *Antenna radiation patterns, Mathematical analysis, Computers, *Reflectors, Design, Electric fields, Magnetic fields.

Topics include: Methods of designing; method for designing antennas with reduced near minor lobes; calculation of radiation pattern of mirror antenna with one point exciter; calculation of radiation pattern of mirror antenna with exciter composed of several point sources; calculation of radiation pattern with reduced first minor lobes; and calculation of radiation pattern of exciter consisting of discrete point sources.

Heiligtag, Th.
THE CAUSES OF ERRORS IN DIRECTION FINDING. [1963] [21]p. (tables omitted).
Order from SLA $2.60 63-14432

Trans. of [Hochfrequenztechnik und Elektroakustik (Germany) 1923, v. 21, p. 77-100].

DESCRIPTORS: *Direction finding, *Errors, Loop antennas, Direction finding signals, Mathematical analysis.

The directional properties of a loop antenna under the simultaneous effect of two wave beams of the same frequency but different direction, strength and phase is mathematically analyzed. The results of this investigation show how the observed errors in bearings, and poor minimum can be easily explained entirely on the basis of the simultaneous influence of two waves coming by different paths from the same transmitter. (Author)

Il'in, B. V. and Anishin, N. S.
ON THE THEORY OF COMBINED SYSTEMS OF CONTROL OF INTERRELATED VARIABLES [AND] A PULSE-SEPARATION CIRCUIT FOR A SERVOSYSTEM. 21 Feb 63 [30]p. 19 refs. FTD-TT-62-1834; AD-299 665.
Order from OTS or SLA $2.60 63-19213

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1962 [v. 5] no. 6, p. 632-649.

DESCRIPTORS: *Control systems, Input-output devices, Linear systems, Coupling circuits, *Pulse discriminators, *Servomechanisms, Differential equations, Functions, Theory, Digital systems, Machines, Programming (Computers).

Kachanov, P. V. and Yantovskii, E. I.
PULSED MAGNETOGASDYNAMIC AC-GENERATOR. 9 Apr 63 [5]p. FTD-TT-63-118.
Order from OTS or SLA $1.10 63-19472

Unedited rough draft trans. of Russian patent 143,172, 1961, appl. no. 695,988/24. 2 Feb 61.

DESCRIPTORS: *Generators, Transformations, Dynamics, Energy, Gas flow, Electricity, Alternating current, *Magnetohydrodynamics, *Energy conversion.

The feature of the introduced generator lies in the arrangement on the DC winding core for excitation in a gas stream of electrodeless annular electric discharges, inducing in the working windings a pulsed AC EMF. Since in such a generator the electric conductivity of the gas is attained basically not on account of high temperature heat sources, then this assures the possibility of reducing the working temperature of the gas. (Author)

Kazachkov, A. I., Klimov, V. A., and Polyak, G. I.
USE OF A CALCULATING BOARD IN COMPUTING AN ELECTRIC SYSTEM WITH DIRECT CURRENT TRANSMISSION, tr. by A. A. Osipovich. 15 Sep 61 [7]p. 4 refs.
Order from OTS or SLA $1.10 62-32771

Trans. of #Elektrichestvo (USSR) 1960, no. 9, p. 11-14.

DESCRIPTORS: *Power, *Transmission lines, Direct current, Synthesis, Electrical engineering.

Mandel'shtam, S. M.
CYBERNETIC WAYS OF IMPROVING MEASURING EQUIPMENT. 10 Apr 63 [5]p. FTD-TT-63-115.
Order from OTS or SLA $1.10 63-19496

Unedited rough draft trans. of #Priborostroenie (USSR) 1962, no. 10, p. 30-31.

DESCRIPTORS: *Cybernetics, *Measuring devices (Electrical and electronic), Bionics, Medical equipment Radiation measurement systems, Conferences.

A summary of lectures given at the Second scientific-technical conference on cybernetic ways of improving measuring equipment, Leningrad, June, 1962.

Miroslavlev, E. N.
NONLINEAR SYSTEMS WITH CORRECTING STABILITIES. [1962] 10p. 7 refs. [Trans.] 6897.
Order from OTS or SLA $1.10 62-24771

Trans. of Moscow U. Vestnik. Seriya Fiziko-Matematicheskikh i Estestvennykh Nauk (USSR) 1954, v. 9, no. 6, p. 33-40.

DESCRIPTORS: Automatic, *Control systems, *Nonlinear systems, *Corrections, Circuits, Stabilization, Servomotors, Feedback, Equations of motion functions.

Pichak, G.
INCREASING RELIABILITY OF ELECTRICAL POWER SUPPLY TO RURAL CONSUMERS (O Povyshennii Nadezhnosti Elektrosnabzheniya Sel'skikh Potrebitelei). 1963, 2p. PL-480 Agr.
Order from OTS $0.50 63-11050

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1960 [v. 20, no. 1] p. 43-44.

DESCRIPTORS: Electrical networks, *Power supplies, *Rural areas, *Realiability (Electronics), Transmission lines, Milking machines, Electric power production.

It is proposed that the reliability of the electrical power supply would be increased considerably by durable poles of reinforced concrete or impregnated wood mounted on reinforced-concrete supports, self-resetting circuit breakers, and division of the network into sections. (Author)

Rips, Ya. A.
CHOICE OF SAFETY FACTOR AND COMPUTATION IN DESIGNING ELECTROMAGNETIC MECHANISMS OF A REQUIRED DEPENDABILITY. 18 Mar 63 [16]p. 5 refs. FTD-TT-63-37; AD-402 439.
Order from OTS or SLA $1.60 63-19470

Unedited rough draft trans. of Elektrichestvo (USSR) 1961, no. 4, p. 76-81.

DESCRIPTORS: *Reliability (Electronics), Electromagnets, Safety, *Probability, *Quality control, Statistical analysis.

Rüdenberg, Reinhold and Koch, Walther.
PROTECTIVE ARRANGEMENT FOR THREE-PHASE POWER DISTRIBUTION SYSTEMS PROVIDED WITH GROUND FAULT NEUTRALIZERS WHICH ARE EQUIPPED WITH GROUND POWER RELAYS RESPONSIVE TO GROUND FAULT VOLTAGE, tr. by J. R.-P. 6 Mar 63, 12p. (figs. omitted).
Order from OTS or SLA $1.60 63-19063

Trans. of German patent 624,091, cl. 21c, gr. 68/50, by Siemens-Schuckertwerke AG, pat. from 13 Mar 31, granted 19 Dec 35, pub. 11 Jan 36.

DESCRIPTORS: *Electrical equipment, Electric relays, Resistors, Capacitance, Electric currents, *Electric potential, Detection, *Electrical engineering, *Transmission lines, Power supplies, Safety.

Russo, G. A., ed.
HYDROELECTRIC POWER STATIONS OF THE VOLGA AND KAMA CASCADE SYSTEMS. 1963, 354p. 185 refs. PL-480 Int.
Order from OTS $3.50 61-31060

Trans. of mono. Volzhskii i Kamskii Kaskady Gidroelektrostantsii, Moscow/Leningrad, 1960.

DESCRIPTORS: *Hydroelectric power systems, *Water supplies, *Economics, *Power plants (Establishments), Structures, *Power equipment, *Dams, Construction, *Civil engineering, Exploration, Scientific research, *Electrical engineering.

Contents:
Introduction, by V. G. Lgalov and others
The hydroelectric power plants of the Volga and Kama cascade system, by G. A. Russo
Water resources, water-and-power economy, and general effect of the cascade, by M. F. Menkel and others
The importance of the Volga and Kama hydroelectric developments for the [Soviet] national economy, by V. A. Sementsov and others
Hydro structures, by S. V. Luzan and others
Main equipment of the hydroelectric power plants, by A. V. Natanson and others

Storage lakes (reservoirs) by Z. D. Luskin
Organization of construction for the hydroelectric developments of the Volga and Kama, by G. D. Petrov and others
Planning and exploration, by A. N. Chemin and others
Research, by D. P. Kushin and others.

Shvernik, L. N.
PROJECTION-TYPE COLOR TELEVISION RECEIVERS. [1963] 14p.
Order from ATS $19.75 ATS-77Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1961, v. 5, no. 8, p. 15-24.

DESCRIPTORS: *Color television, *Television receivers, Motion picture projectors, *Television display systems.

Sudravskii, D. D.
REPRODUCTION OF TELEVISION PICTURES WITH THE AID OF FIBER OPTICS. [1963] 6p.
Order from ATS $10.50 ATS-75Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1961, v. 5, no. 5, p. 23-27.

DESCRIPTORS: *Fiber optics, *Television display systems, Television receivers.

Taranets, D. A.
A DOUBLE-UNIT TELEVISION MOTION PICTURE PROJECTOR FOR UNINTERRUPTED TRANSMISSION OF COLOR MOTION PICTURES. [1963] 12p.
Order from ATS $16.25 ATS-73Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1962, v. 6, no. 10, p. 45-53.

DESCRIPTORS: *Color television, *Television equipment, *Motion-picture projectors, Television transmitters, Motion pictures, Television cameras, Color film.

Tarasov, A. N.
NEW MOTION PICTURE PROJECTOR WITH OPTICAL COMPENSATION FOR TELEVISING COLOR FILMS. [1963] 11p.
Order from ATS $11.85 ATS-76Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1961, v. 5, no. 7, p. 43-50.

DESCRIPTORS: *Motion-picture projectors, *Color television, Television equipment, *Television transmitters, *Color film, Optical properties, Television cameras.

Yudzon, O. I.
QUALITY CONTROL BY TELEVISION IN THE MANUFACTURE OF LIGHT-SENSITIVE MATERIALS. [1963] 5p.
Order from ATS $7.75 ATS-72Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1962, v. 6, no. 9, p. 51-54.

DESCRIPTORS: *Television communication systems, Production, Light, Sensitivity, Materials, *Quality control.

Zingerenko, A. M.
DISTORTION OF THE LENGTH OF TELEGRAPH PULSES UNDER THE ACTION OF FLUCTUATING NOISE IN AN FM SYSTEM. [1961] 14p. 2 refs. MDF Z 107.
Order from OTS or SLA $1.60 62-23180

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 3, p. 70-80.

DESCRIPTORS: *Telegraph signals, Electromagnetic pulses, Distortion, Noise, Oscillation, *Frequency modulation, *Band-pass filters.

A formula is derived in this paper for the resultant variation of the frequency when signals are transmitted by frequency modulation and by the action of fluctuating noise and the mean-square distortions of the length of telegraph pulses are determined. The dependence of the mean-square distortions on the width of the filter pass-band is shown as well as its relation to the frequency deviation and to the telegraphing rate. An optimum ratio of the pass-band width of the receiver filter to the frequency deviation is determined which will guarantee minimum mean-square distortions under the action of fluctuating noise. (Author).

Mechanical Engineering

HEAT POWER ENGINEERING, 1962, VOL. 9, NO. 6: SELECTED ARTICLES. 14 Feb 63 [43]p. 14 refs. FTD-TT-62-1738.
Order from OTS or SLA $4.60 63-19497

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 6, p. 24-31, 88-93.

DESCRIPTORS: *Heat, *Power, *Engineering, Numerical analysis, *Thermal conductivity, Cooling, *Turbine parts, *Diffusers, *Nomographs, *Fluid flow.

Contents:
An approximate solution to a two-dimensional stationary heat-conduction problem and its use in the determination of the effect of artificial cooling of turbine components, by D. A. Pereverzev
Optimum diffuser shape, by I. E. Virozub and A. Sh. Dorfman
Nomograms for the approximate calculation of profile flow in turbine grills, by G. Ya. Shnitser.

Alenchikov, S. I., Evzerova, F. N., and Kemel'man, M. N.
METHOD OF TAKING A REPRESENTATIVE SAMPLE OF WET STEAM. [1962] 10p. (figs. omitted).
Order from OTS or SLA $1.10 63-15139

Trans. of Elekt[richeskie] Stantsii (USSR) 1956, v. 27, no. 7 [p. 14-17].

DESCRIPTORS: *Steam, *Sampling, Steam turbines, Pipes, Condensers (Liquefiers).

Maksudov, T. M.
USSR INDUSTRIAL DEVELOPMENT: SOVIET REFRIGERATION MACHINERY NO. 13 (STANDARDIZATION OF HOME REFRIGERATORS). 23 Apr 63, 8p. JPRS: 18860.
Order from OTS $0.50 63-21654

Trans. of Standartizatsiya (USSR) 1963 [v. 27] no. 2, p. 24-27.

DESCRIPTORS: *Industrial production, *Refrigeration systems, *Machinery, Kitchen equipment and supplies, Standardization.

Ordnance, Missiles, and Satellite Vehicles

ARTIFICIAL SATELLITES OF THE EARTH, 1962, VOL. 13: SELECTED ARTICLES. 23 Apr 63 [46]p. 22 refs. FTD-TT-62-1585.
Order from OTS or SLA $4.60 63-19534

Unedited rough draft trans. of Iskusstvennye Sputniki Zemli (USSR) 1962, v. 13, p. 67-84, 123-133.

DESCRIPTORS: *Satellite vehicles, *Space probes, *Solar radiation, *Radiation measurement systems, *Space medicine, Microorganisms, Yeasts, *Dogs, Blood circulation, Space flight.

Contents:
Radiation belts around the earth at altitudes of 180 to 250 km, by S. N. Vernov and others
Soft corpuscular radiation at an altitude of 320 km in the equatorial latitudes, by S. N. Vernov and others
Measurement of absorbed dosage on third satellite space vehicle, by I. A. Savenko
Effect of factors encountered in the space flight of the satellite vehicle "Vostok-2" on microorganisms: investigation of yeast organisms of various ploidy, by N. V. Kovyazin and others
Results obtained in the investigation of certain indicators of peripheral blood circulation in dogs during and after a flight into outer space, by V. V. Yakovlev.

FORWARD TO MARS. 28 Jan 63 [5]p. FTD-TT-63-94; AD-400 548.
Order from OTS or SLA $1.10 63-19632

Unedited rough draft trans. from Izvestiya (USSR) 1962, 15 Nov.

DESCRIPTORS: *Mars probes, Space probes, Satellites (Artificial).

A popularized account of the missions of artificial interplanetary station Mars I.

WORLD WITHOUT GRAVITY. 23 Apr 63 [6]p. FTD-TT-63-300.
Order from OTS or SLA $1.10 63-19659

Unedited rough draft trans. from Izvestiya (USSR) 1962, 1 Sep, p. 4.

DESCRIPTORS: *Weightlessness, *Space environmental conditions, Gravity, Astronauts.

Bodner, V. A. and Seleznev, V. P.
AUTOMATIC GUIDANCE IN AN INERTIAL SPACE. [1963] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10902

Summary trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 4, p. 197-207.
Complete translations are available from OTS or SLA $2.60 as 63-10842 [1962] 21p. and as 62-13569, FTD-TT-61-155, 3 Nov 61 [23]p. (unedited).

DESCRIPTORS: *Inertial navigation, Automatic, *Control systems, *Space navigation, Equations of motion, Gravity, Drag.

For abstract see Technical Translations 8: 1011, 1962.

El'yasberg, P. E.
THE DETERMINATION OF THE ORBIT FROM TWO POSITIONS. [1963] [32]p. 2 refs.
Order from OTS or SLA $3.60 63-14894

Trans. of Iskusstvennye Sputnik Zemli (USSR) 1962, v. 13, p. 3-22.

DESCRIPTORS: *Position finding, *Orbital trajectories, *Space navigation, *Rendezvous guidance, Elliptical orbit trajectories, Partial differential equations, Celestial mechanics, Numerical analysis.

The explicit guidance problem of Keplerian mechanics is discussed and analyzed in detail as to the types of motion between two positions and the existance and uniqueness of the motion. This paper is of basic interest to those interested in satellite rendezvous and intercept guidance problems. (Author)

Goncharenko, M. N.
SOVIET REPORT ON WESTERN MISSILES AND ANTIMISSILES. 3 June 63, 341p. 23 refs. JPRS: 19531.
Order from OTS $5.00 63-21971

Trans. of mono. Rakety i Problema Antiraket (Missiles and the Problem of Antiraket) Moscow, 1962, 260p.

DESCRIPTORS: Rocket research, Rocket motors, Rocket propellants, *Guidance, Rockets, *Guided missiles, Launching sites, Guided missile launchers, Antimissile defense systems.

The book is written from materials published in the foreign press. The author acquaints readers with the principles of rocket motion, modern reaction engines, the trends of their development, and perspectives for the utilization of new types of fuel. The book briefly relates about the modern rockets and reaction-propelled

missiles found in the armament of foreign armies and about how the problem of intercepting ballistic missiles and intercontinental ballistic missiles is being solved outside the USSR. All statistical and factual material is also presented from data of the foreign press. (Author)

Gorbakev, N.
ROCKET TESTERS. 23 Apr 63 [9]p. FTD-TT-63-51.
Order from OTS or SLA $1.10 63-19522

Unedited rough draft trans. from Krasnaya Zvezda (USSR) 1962, 15 July, p. 2.

DESCRIPTORS: Rockets, *Rocket launchers, *Engineering personnel, Test methods.

A popularized account concerning pre-launch check-outs and the men involved in them.

Grebennikov, Evgenii and Demin, Vladimir.
FLIGHTS TO THE PLANETS. 15 Mar 63 [6]p. FTD-TT-63-160.
Order from OTS or SLA $1.10 63-19509

Unedited rough draft trans. from Pravda Vostoka (USSR) 1962, 3 Nov, p. 2.

DESCRIPTORS: *Space flight, *Interplanetary trajectories, Spaceships.

Himmelfarb, B. N.
ON THE ADJUSTMENT OF ARTIFICIAL EARTH SATELLITE POSITIONS TO STARS. 22 Apr 63 [7]p. 2 refs. FTD-TT-62-1885.
Order from OTS or SLA $1.10 63-19654

Unedited rough draft trans. of Byulleten' Stantsii Opticheskogo Nablyudeniya Iskusstv[ennykh] Sputnikov Zemli (USSR) 1960, no. 10[20] p. 8-10.

DESCRIPTORS: *Satellites (Artificial), *Celestial guidance, *Position finding, Corrections, *Stars, Maps.

Kislik, M. D.
THE MOTION OF THE ARTIFICIAL SATELLITE IN A NORMAL GRAVITY FIELD OF THE EARTH. [1962] [20]p. 6 refs.
Order from OTS or SLA $1.60 63-10312

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1960, v. 4, p. 3-17.
Another trans. is available free from Land-Air as LTS-6. When supply is exhausted, order from OTS or SLA $3.60 as 61-27018, 1 May 61 [32]p.

DESCRIPTORS: *Satellite vehicles, *Orbital flight paths, Gravity, Earth, Motion.

For abstract see Technical Translations 6: 349, 1961.

Kroshkin, M. G.
MAN PENETRATES INTO THE COSMOS. 27 Mar 63 [71]p. FDT-TT-62-1854.
Order from OTS or SLA $7.60 63-19515

Unedited rough draft trans. of mono. Chelovek Pronikaet v Kosmos, Moscow, 1962, 160p.

DESCRIPTORS: *Astronautics, Manned, Space flight, Satellites (Artificial), *Scientific satellites, Sounding rockets, Astronauts.

The pamphlet tells of manned space flights and about the use of rockets and artificial earth satellites for scientific purposes. The author tells of the basic stages in the history of the brief, but violently developing "Space Age": the works of the founder of astronautics, K. E. Tsiolkovskiy and the heroic flights of Soviet Pilot-Astronauts. The author pays special attention to the description of the results of scientific investigations in space and points out their significance in the general complex of geophysical and astronomical sciences. Much attention is given to the description of the earth's radiation belts, their discovery and a hypothesis of their origination. Data obtained in investigating the invisible part of the moon and interplanetary media is expounded. The question of whether or not there is life on other stellar worlds and can communication be established with intelligent beings of these worlds is considered. The author attempts to look into the future and evaluate what the influence of man's entry into space would be on the progress of science and technology, culture and economics. (Soviet editor's note)

Marinin, Yurii.
AUTOMATIC STATIONS FLY TO THE PLANETS. 29 Mar 63 [7]p. FTD-TT-63-301. AD-402 442
Order from OTS or SLA $1.10 63-19519

Unedited rough draft trans. from Turkmenskaya Iskra (USSR) 1962, 30 Nov, p. 4.

DESCRIPTORS: *Mars probes, *Venus probes, Space probes, Satellites (Artificial).

A non-technical comparison of the Mars I and Mariner II probes.

Mikhailov, A.
NOCTOVISION DEVICES FOR LAND ARMIES. 4 Jan 60 [10]p. [US]ASIA SC-39/59.
Order from OTS or SLA $1.10 62-32782

Trans. of Voennye Znaniya (USSR) 1959 [v. 35] no. 1, p. 17-19.

DESCRIPTORS: *Night warfare, Sensory mechanisms, *Vision, *Infrared equipment, Infrared telescopes, Infrared binoculars, Infrared communication systems, Optical equipment.

Semenov, B.
MAIN GOALS OF THE HISTORICAL FLIGHT. 8 Mar 63 [6]p. FTD-TT-63-24; AD-401 727.
Order from OTS or SLA $1.10 63-19193

Unedited rough draft trans. from Sovetskaya Rossiya (USSR) 1962, no. 192(1872) 15 Aug, p. 2.

DESCRIPTORS: *Space flight, *Manned spacecraft, Control, Automation, Astronauts.

The pilots A. G. Nikolayev and P. R. Popovich are confronted with a series of most interesting problems, among them how to further improve the system of control of the ship. With each new thrust into outer space man more and more feels himself master of the ship. Or, descriptively speaking, he is growing space wings' and handles them more confidently. How is the control of a space ship effected? We have called on our scientific observer, Candidate of Technical Sciences B. Semenov, to answer this question. (Soviet Editors Note)

Shternfel'd, A.
THE PATH TO MARS. 28 Jan 63 [7]p. FTD-TT-63-93; AD-299 629.
Order from OTS or SLA $1.10 63-19512

Unedited rough draft trans. from Sovetskaya Rossiya (USSR) 1962, 3 Nov.

DESCRIPTORS: *Interplanetary trajectories, Space probes, *Mars probes, Satellites (Artificial).

A non-technical review of trajectoral considerations involved in Earth-Mars flights.

Sushkov, Yu.
INTERPLANETARY SHIP RETURNS TO THE EARTH. 9 Apr 63 [6]p. FTD-TT-63-57.
Order from OTS or SLA $1.10 63-19524

Unedited rough draft trans. from Sovetskaya Rossiya (USSR) 1959, 25 Sep, p. 4.

DESCRIPTORS: *Satellites (Artificial), *Atmosphere entry, *Aerodynamic heating.

A popularized discussion of re-entry problems and techniques.

Volovich, V. G. and Isakov, P.
WHERE THE COSMONAUTS LANDED [AND] SPACE AND PROBLEMS OF GRAVITATION. 29 May 63, 11p. JPRS: 19490.
Order from OTS $0.50 63-21958

Trans. from Meditsinskaya Gazeta (USSR) 1963 [v. 26] 12 Apr, p. 2.

DESCRIPTORS: *Astronauts, Space environmental conditions, Space medicine, Gravity, *Weightlessness, Space flight.

Sanitation and Safety Engineering

Andreev, S. V., Bubnov, G. M. and others.
AUTOMATIC LIGHT-TRAPS. [1962] 5p. (fig. omitted). 1 ref.
Order from OTS or SLA $1.10 63-19052

Trans. of Zashch[ita] Rast[enii] ot Vred[itelei] i Bolez̆nei (USSR) 1962 [v. 7] no. 1 [p. 49-50].

DESCRIPTORS: *Lighting equipment, *Insect control, Light.

A description is given of a series of electric traps with different sources of light (incandescent lamp, luminescent, ultraviolet light and others) and with combined application of phototaxes and chemotaxes for the purpose of attracting mass pests from fairly large areas to light or odor for their subsequent extermination.

Haase, L. W.
HYPOCHLOROUS ACID, ITS PREPARATION, PROPERTIES, AND APPLICATION IN THE TREATMENT OF WATER AND SEWAGE. [1963] 40p. (figs. omitted).
Order from SLA $3.60 63-14081

Trans. of Vom Wasser (West Germany) 1949, v. 17, p. 164-197.

DESCRIPTORS: *Hypochlorous acid, Sanitary engineering, Purification, *Water supplies, *Sewage.

Zuzlov, V. M., Kolomietz, N. G., and Terskov, I. A.
MERCURY-QUARTZ LAMPS OF THE PRK TYPE IN THE ULTRAVIOLET TRAPS. [1962] 3p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-19051

Trans. of Lesn[oe] Khoz[yaistvo] (USSR) 1962 [v. 14] no. 3, p. 53-56.

DESCRIPTORS: *Mercury lamps, Light, *Lighting equipment, *Ultraviolet equipment, *Insect control.

Kalabina, M. M., Rogovskaya, Ts. I., and Shneerson, L. I.
BIOCHEMICAL TREATMENT OF PHENOLIC WASTE WATERS OBTAINED IN THE THERMAL PROCESSING OF LIGNITE AND SHALES. Apr 63, 7p. 10 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of mono. Ochistka Prom[yshlennykh] Stochnykh Vod [Purification of Industrial Waste Waters] Moscow, 1960, p. 131-134. (Vses[oyuznyi] Nauchn[o]-Issled-[ovatel'skii] Inst[itut] Vodosnabz[heniya] Kanaliz[atsii] Gidrotekhn[icheskikh] Sooruzhenii i Inzh[enernoi] Gidrogeol[ogii]. Tr[udy] Soveshch[aniya] Moscow, 1958). Another trans. is available from ATS $14.50 as ATS-77P66R [1963] 13p.

DESCRIPTORS: *Water supplies, Wastes (Industrial), *Purification, Shale, Coal, Processing, Biochemistry, *Phenols, Organic compounds, Chemical engineering.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Fink, Hermann and others.
ABOUT THE PROTEIN QUALITY OF SINGLE-CELL GREEN ALGAE AND THEIR RELATION TO DIETARY LIVER NECROSIS IN RATS, REPT. 11. [1963] 3p. 3 refs.
Available on loan from SLA 63-16294

Trans. of [die] Naturwissenschaften (West Germany) 1954, v. 41, p. 169.

DESCRIPTORS: *Proteins, *Algae, Diet, *Liver, *Necrosis, Rats, Food, Growth.

Fink, Hermann and others.
ANTI-NECROGENOUS EFFECT OF BEER ON DIETARY LIVER NECROSIS. [1963] 4p. 11 refs.
Available on loan from SLA 63-16293

Trans. of [die] Naturwissenschaften (West Germany) 1953, v. 40, p. 171.

DESCRIPTORS: *Necrosis, Inhibition, *Liver, *Hepatitis, Beverages, Diet.

Fink, Hermann and others.
NON-FAT MILK ACQUIRES LIVER NECROSIS CAUSING CHARACTERISTICS DURING TECHNICAL DRYING, REPT. 3. [1963] 4p. 4 refs.
Available on loan from SLA 63-16291

Trans. of [die] Naturwissenschaften (West Germany) 1955, v. 42 [no. 15] p. 446-447.

DESCRIPTORS: Diet, *Milk, *Liver, *Necrosis, Rats, *Dehydrated foods, Food, Nutrition, Cereals, Proteins.

Hampel, G.
THE EXACT DETERMINATION OF STARCH DAMAGE AND OVER-GRINDING BY THE AMYLOSE NUMBER. [1963] 13p.
Available on loan from SLA 63-16299

Trans. of Getreide und Mehl (West Germany) 1952, v. 2, no. 2, p. 2-16.

DESCRIPTORS: Determination, *Starches, Processing, Damage, Decomposition, Flour, Manufacturing methods.

The conception of a partially stratified structure of the starch granules is supported by the paper. By gradually increasing mechanical effects, mixtures of starch components were isolated, which at the same concentration and temperature with addition of iodine, yielded compounds of various degrees of coloring. It can be holding times and higher holding temperatures following blanching. The pectin metheylesterase of green beans was not completely inactivated until blanch temperatures were raised to 88°C. (Author)

Kühne, Friedrich.
APPARATUS FOR MEASUREMENT OF THE WATER CONTENT OF GRAIN, GROATS, FLOUR AND OTHER VEGETABLE PRODUCTS. [1963] [4]p. 2 refs.
Available on loan from SLA 63-14798

Trans. of German patent 939, 293, cl. 421, gr. 951, p. 52919 IX/421 D, appl. 17 Sep 53, pub. 19 Jan 56, issued 16 Feb 56, pat. from 25 Aug 49.

DESCRIPTORS: Measurement, Water, *Cereals, *Flour, *Test equipment.

The invention involves an apparatus for measurement of the water content of grain, groats, flour, and other vegetable products, under pressure, by measurement of the electrical resistance of tablets, characterized by the fact the molds are used for the manufacture of the tablets, by the size of which the different specific electrical resistance of various materials can be equalized. (Author)

Ryutov, D. G.
HIGH FREQUENCY FISH DEFROSTERS (Vysokochastotnye Defrostery dlya Ryby) tr. by A. Neal. [1962] [9]p. (foreign text included) 4 refs.
[CSIRO Trans] no. 5955.
Order from OTS or SLA $1.10 63-15309

Trans. of Kholodil'naya Tekhnika (USSR) 1962 [v. 39] no. 1, p. 68-70.

DESCRIPTORS: *Fishes, *Frozen food, Freezing, High frequency, *Electric discharges, Processing, Ovens.

Schmutz, M. F.
IS ALUMINUM SUITABLE FOR THE PACKAGING OF PRODUCTS WITH AN ALCOHOL BASE? [1963] 14p.
Order from ATS $14.85 ATS-05Q70F

Trans. of Emballages (France) 1962, v. 32, no. 205, p. 127-129, 131-133.

DESCRIPTORS: *Alcohols, *Packing materials, *Aluminum, *Containers.

Van Buren, J. P., Moyer, J. C. and others.
CHANGES IN PECTIC SUBSTANCES IN THE PROCESSING OF GREEN BEANS. [1963] 8p. 12 refs.
Available on loan from SLA 63-16483

Trans. of [Hoppe Seyler's] Z[eitschrift für] Physiol [ogische] Chem[ie] (West Germany) 1960, v. 321, p. 107-113.

DESCRIPTORS: *Pectins, Processing, Food, *Vegetables, *Preservation, Chemical analysis.

Green beans blanched at temperatures between 65, 5 and 82°C had a greater proportion of their pectic substances as pectic acid than beans receiving either no blanch or blanches at 88°C or higher. This was found whether the beans were examined after blanching or after cooking at 115, 5°C. The extent of the transformation of water soluble pectin to pectic acid was increased with longer assumed that the amylose located in the outer layers is shorter chained than the amylose located in the interior of the starch granule. The sugar forming properties of flour depends largely on the extent of mechanical damage to starch caused by the milling process. An exact method was developed, which permits to define the starch damage in figures by means of amylose counts. This method makes feasible further stream control in the mill. (Author)

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

IMPROVEMENT OF CLASSIFIERS OF PULVERULENT MATERIALS. [1963] [7]p.
Available on loan from SLA 63-16330

Trans. of French patent 1,126,481, requested 11 May 55, granted 30 July 56, pub. 23 Nov 56, by Société Ultrafine de l'Union Française.

DESCRIPTORS: *Fluidized solids, Particles, Separation, Classification, Machines, Gas flow, Materials.

The invention involves a Classifier for pulverulent materials suspended in a gaseous flow, characterized by the fact that the classification is conducted on two levels, the lower level being formed by two co-axially revolving surfaces. This space gradually becomes narrower and its radius (width) decreases from the lower intake to the upper outlet. The upper level is formed by two discs, one fixed, and the other rotating, (Machinery, Fabrications and Accessory Equipment, and its intake coincides with the outlet of the lower level. The lower level can be formed by two truncated cones, one forming the inner surface which rotates, the other forming the fixed outer surface. The outlet of the second level is formed by a central opening, through which the suction occurs. (Author)

UPRIGHT PRESS FOR CONDENSING WOOD CHIP MATS ETC. WITH TABULAR PLATENS. [1963] 8p. 2 refs.
Order from OTS or SLA $1.10 63-10943

Trans. of German patent 1,097,121, 12 Jan 61, by Niederrheinische Maschinen Fabrik Becker & van Huellen.

DESCRIPTORS: *Presses (Machinery), Contraction, Wood, Particles, Design

An upright press for condensing particle mats and similar matter is described. It is equipped with a movable screen attached to the bottom of the upper press platen, characterized by the fact that the panel-type screen clamped parallel to the plane of the underside of the upper platen into a support frame elastically (Machinery, Fabrications and Accessory Equipment, attached to the upper platen and sometimes also to the press frame and, when the press is opened, preferably is set into vibrating motion by a controllable, conventional vibration motor mounted on the support frame. The support frame of the screen has attached to each of two opposing sides an arm protruding outward and a perpendicular rod affixed thereto which is guided in an outward extending collar-type arm of the upper platen and, fitted between this arm and the pertinent arm of the support frame, in an inwardly extending perpendicular sleeve of the press frame. Each perpendicular rod carries a preferably adjustable headpiece and, attached to the pertinent arm of the upper platen a coil spring which, when the press is opened, can effect a sudden lifting of the screen from the condensed material. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET METAL-WORKING EQUIPMENT NO. 54. 22 May 63, 23p. JPRS: 19338.
Order from OTS $0.75 63-21889

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1963 [v. 21] no. 2, p. 7-8; and 13 selected articles from Mar 63 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, *Presses (Machinery), Industrial plants, Metal-forming presses, *Lathes, Spark machining, *Grinders, *Torches, Cutting tools, Crankshafts.

Contents:
January production at the Chimkent automatic presses plant, by A. Grishkov
Lithuanian machine tools
Alma-Ata metal-cutting machine tools
Chimkent automatic presses plant
B-654 press remains uninstalled at machine building plant imeni Sverdlov
New production at Kirovakan precision machine tools plant, by V. Adamyants
Cylinderical grinder developed at Vil'nyus branch institute
VSh 250 machine tool produced at Kirov plant
Double crankshaft press K-3044
EIS-10 electro-spark machine developed in Chuvash ASSR
Leningrad Kinap plant installs automatic press
New single-design lathe for Tallin marine-machinery plant
The Chernomer gas-cutting machine, by I. Kirpichnikova
The plan is to be fulfilled in every detail.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 72. 13 May 63, 43p. JPRS: 19146.
Order from OTS $1.25 63-21802

Trans. from Pravda, Moscow (USSR) 1962 #[no. 332] 28 Nov, p. 2; 30 Nov, p. 3; Izvestiya (USSR) 1962, 16 Nov, p. 4; Ekonomicheskaya Gazeta (USSR) 1962, no. 45(66) 3 Nov, p. 46-47; no. 46(67) 10 Nov, p. 47; no. 47(68) 17 Nov, p. 41-42, 47; no. 48[69] 24 Nov, p. 47.
##Another trans. is available from HMSO $0.77 in NLL Translations Bulletin, v. 5, no. 4.

DESCRIPTORS: *Industrial production, *Precision equipment, Radio receivers, *Sound reproduction systems, *Electron beams, Refining, Welding, *Spark machining, Electric fields, Separation, Filters (Fluid), Light, *Lasers, Lighting equipment, *Radioactive isotopes, Machine tools, Computers, *Bearing, Panel boards (Electricity), Professional personnel.

Contents:
Complaint against defective "Belarus-59" radio phonograph, by A. Kainov
##Application of electron and ion beams, electric and electromagnetic fields in processing various materials by M. Fedorov
Output of L'vov electric bulb plant two years ahead of schedule, by A. Shuremov
Various items of precision equipment advertised for sale

Development of wide range of radioisotope equipment effectively increases industrial efficiency, by A. Petros'yants
New computers designed for use in food catering establishments
Various items of precision equipment advertised for sale
Advantages of self-lubricating bearings
Plant criticized for shipping incomplete control boards and benchboards
Bellows for sale
Ukrainian sovnarkohoz admits negligence in examination of recommended inventions
Wanted: optician
For sale: precision equipment.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 74. 31 May 63, 9p.
JPRS: 19517.
Order from OTS $0.50 63-21967

Trans. of Radio, Moscow (USSR) 1963, no. 4, p. 2, 5-6; and from Pravda [Moscow] (USSR) 1963, 18 Feb.

DESCRIPTORS: *Industrial production, *Precision equipment, Machine tools, Automatic, *Cold cathode tubes, Control systems, *Radio equipment, *Television receivers.

Contents:
More production of electronic instruments with cold cathodes needed, by A. Berg and V. Nize
Increase in production of new radio equipment needed (excerpt)
Steps to improve the mass-production of television sets.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 75. 4 June 63, 91p.
JPRS: 19559.
Order from OTS $2.25 63-21980

Trans. of Novye Tovary (USSR) 1962, no. 8, p. 4-5; no. 11, p. 1-5; also 20 short articles from 7 Russian newspapers plus one unidentified article.

DESCRIPTORS: *Industrial production, *Precision equipment, Motion picture film, Motion picture projectors, *Electronic recording systems, *Measuring devices (Electrical and electronic), Industrial plants, Economics, Fluorescence, *Lighting equipment, *Diffraction grating, *Motion picture cameras, *Radio receivers, Air conditioning equipment, *Cameras, Photographic recording systems, Textiles, Machines, *Voltage regulators, Tires, *Storage batteries, *Meters, *Television receivers, Maintenance.

Contents:
Various items of precision equipment offered for sale
Development of a new high-sensitivity motion picture film and automatic projection, by Yu. Shalamov
Thermoplastic recordings to be used in the preservation of scientific and research material, by V. Protashchik
New electrical measuring devices and release of millionth radio
Work at automatic equipment shop of Kalibr plant ahead of schedule
Fluorescent lamp more economical than the conventional incandescent lamp, by Yu. Lyubichev
Quality of glass envelopes for television tubes and electric bulbs is improved
Shortages in electric bulbs, dishes, razor blades etc., due to faulty planning, by S. Zagoruyko
Diffraction gratings and motion picture cameras, by B. Gusev
The Elektron portable radio
Rekord 61-M-a new radio, by F. Tormozov
Air conditioner draws air through filters and water screen
The Serenada radio-phonograph to replace currently made models
Permanent pavilion, mobile exhibits, television broadcasts to spur production of consumer goods
A radio-phonograph, an accordion, an automatic enlarger, children's toys and a variety of consumer goods approved for mass production
The Kiev-Vega-2 - a new camera
The number of motion picture camera amateurs is growing day by day
The new motion picture projector Luch-2
Film titler TS-1
Assembly tables for motion picture films
Film sound synchronizer, by A. Tolkachev
Want ads for engineers
Defective pressure gauges, manometers and thermometers, defective parts, deviations from blueprints and laxity of plant party committee responsible for breakdown of production schedule at Kazan' Teplokontrol' plant
A new, high-speed, two-needle sewing machine
For sale: voltage regulators and luminophors
Programmed operation of proportioning scale for use in tire plants
Radios fed from storage batteries
Teplokontrol' plant criticized for poor organization and lack of progressive methods
Lenneftekip instrument making plant criticized for slipshod work methods
Automatic indicators, recorders and controlling devices
Minsk radio plant, though producing poor quality television sets, is awarded citation
New motion picture camera designed wide screen 70 mm filming
Multitude of models and lack of uniformity in circuits, systems and components blamed for poor quality of television sets, by V. Matveev.

Bertolini, Louis.
DEVICE FOR OPENING THE DOORS OF DISHWASHING MACHINES OR ANY OTHER SIMILAR MACHINES. [1963] 3p.
Order from ATS $4.00 ATS-54Q69F

Trans. of French patent 644,054, filed 16 Nov 27, granted 26 May 28, pub. 2 Oct 28.

DESCRIPTORS: Structural parts, Operation, Kitchen equipment and supplies, Machines, Dishwashers

Fiebig, E.
GAUGE CONTROL IN COLD ROLLING MILLS. May 63.
Order from BISI £4 15s BISI-3138

Trans. of Blech (West Germany) 1961, v. 8 [no. 11] p. 804-810.

DESCRIPTORS: Thickness, *Rolling mills, Cold-working, Control systems, Steel

Lebedev, A. A.
THE MAGNETIC FIELD, EXCITED BY THE PRIMARY WINDING, IN THE AIR GAP OF AN INDUCTION MACHINE WITH A CURVED STATOR. 18 Mar 63 [17]p. 2 refs. FTD-TT-63-157; AD-401 742.
Order from OTS or SLA $1.60 63-19167

Unedited rough draft trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii]. Elektromekhanika (USSR) 1959, no. 5, p. 14-23.

DESCRIPTORS: *Induction motors, Inductance, Magnetic fields, Excitation, Equations, Curved profiles.

A new type of curved-stator winding is proposed in order to reduce the influence of the edge effect on the operation of an induction machine. The new winding differs from those in use in that the linear load at the ends of the arcs of the curved stator are reduced to zero. The application of a winding of the new type makes it possible to raise the efficiency of a motor with a curved stator and a massive rotor. The power factor is also improved and the asymmetry of the linear currents is practically eliminated. This article is devoted to an evaluation of magnetic fields excited in the air gap by a stator having the new type of winding. (Author)

Lenze, J., Schliephake, G., and Schoele, B.
MODERN CONTROL POSSIBILITIES FOR HIGH-SPEED TANDEM COLD ROLLING MILLS. May 63, 25 refs.
Order from BISI £6 10s BISI-3139

Trans. of Blech (West Germany) 1961, v. 8 [no. 11] p. 810-820.

DESCRIPTORS: *Rolling mills, Cold-working, Control systems, Drives, Thickness, Measurement, Steel

Maltsev, V. F.
EXPERIMENTAL DETERMINATION OF STRESSES IN FREE-WHEELING ROLLER MECHANISMS (Eksperimental'noe Opredelenie Usilii v Rolikovykh Mekhanizmakh Svobodnogo Khoda]. [1962] 12p. 3 refs.
Available from OTS on loan 62-33589

Trans. of [Vestnik Mashinostroeniya] (USSR) 1961 [v. 41, no. 9] p. 39-43.

DESCRIPTORS: Determination, *Stresses, Rotation, *Roll, *Machines, Load distribution, Tests, Mechanical engineering

Missotten, Simon.
APPARATUS FOR REGULATING GAS INTAKE IN AN INTERNAL COMBUSTION ENGINE CONNECTED TO A DYNAMO, tr. by L. H. 3 Apr 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-19269

Trans. of French patent 430,463, gr. V, cl. 8, appl. 6 Apr 11, granted 11 Aug 11, pub. 17 Oct 11.

DESCRIPTORS: Internal combustion engines, *Fuel meters, Design, Electrical equipment, Dynamotors, Fuels, Gases, Intake valves.

Pomp A.
NEW MEASURING INSTRUMENTS FOR TESTING BORE OF WIRE-DRAWING DIES. [1962] 3p. (figs. refs. omitted).
Order from SLA $1.10 62-18240

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1952, v. 94, no. 11/12, p. 305-306.

DESCRIPTORS: *Dies, Drawing (Machine processing) Wire, Instrumentation.

Verezub, V. N., Potapenko, A. E., and Chistyakov, E. S.
AN ULTRASONIC METHOD OF PRODUCING CHIP BREAKERS. 3 Jan 63 [9]p. FTD-TT-62-1266; AD-295 765.
Order from OTS $0.50 63-11629

Unedited rough draft trans. of Izvestiya V[ysshikh] U[chebnykh] Zav[edenii]. Mashinostroenie (USSR) 1960, no. 8, p. 115-119.

DESCRIPTORS: *Ultrasonic equipment, Generators, Design, Circuits, *Cutting tools, Alloys, Ceramic materials, Machining, *Material removal.

An ultrasonic device is described for use in preparing chip breakers on the foreward face of ceramic or hard-alloy cutting tool blades. It is possible to obtain recessed, camfer, or hole type chip breakers with a high degree of surface cleanness and without blade spoilage from burns, microcracks, or cavities.

Engines and Propulsion Systems

Dinerman, A. P. and Getsov, L. B.
STRUCTURAL STRENGTH OF GAS TURBINE PLATES UNDER UNSTEADY OPERATING CONDITIONS. 29 Jan 63 [15]p. 4 refs. FTD-TT-62-1798; AD-299 658.
Order from OTS or SLA $1.60 63-19504

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 5, p. 38-43.

DESCRIPTORS: Gas turbines, *Turbine parts, *Metal plates, Mechanical properties, Fracture (Mechanics), Turbines, Starting, Operation.

Efficiency problems of turbine plates with different sized peripheral concentrations are scrutinized under conditions of repeated rapid starting. The nature and causes of plate failure are analyzed and the impossibility of determining the number of start-ups leading to failure is demonstrated by means of calculations from durability exhaustion formulas and from Coffin's formula. (Author)

Ernst, H[ans].
SUPERCHARGING OF AUTOMOTIVE DIESEL ENGINES. 15 June 48 3p. (figs. omitted).
Order from SLA $1.10 63-14274

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Diesel engines, Vehicles, *Superchargers, Operation, Mechanical engineering, Power.

Kneule, F.
SUMMARIZED REPORTS CONCERNING THE RESEARCH WORK AT THE INSTITUTE FOR CHEMICAL TECHNOLOGY AND MINERALOGICAL INVESTIGATION AT THE TECHNICAL HIGH SCHOOL IN MUNICH, 13 NOV-5 DEC 45. 14 June 48, 13p. (figs. omitted).
Order from SLA $1.60 63-14288

Partial trans. from unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Knocking, Engine noise, *Fuels, *Internal combustion engines, Measurement, Scientific research, Germany.

Topics includes: Basic investigations concerning the significance of the "knock delay" and its relation to the knock intensity; attempts to replace the bouncing pin used on the CFR engine by an electroacoustic indicating device; counting device for knock measurements; knock measurements on multicylinder engines (automotive engines, aviation engines); test of the possibility of using low octane fuels; experiments on a BMW engine of 3.5 liters' displacement with gasoline of octane number 46; and experiments on two-stroke engines.

Schmidt, Fritz A. F.
COMBUSTION MOTORS: THERMODYNAMIC AND EXPERIMENTAL PRINCIPLES, WITH SPECIAL CONSIDERATION OF AIRPLANE MOTORS. [Verbrennungsmotoren, Thermodynamische und Versuchsmassige Grundlagen unter Besonderer Berucksichtigung der Flugmotoren]. [1963] 27p. (figs. omitted).
Order from SLA $2.60 63-14284

Trans. of mono. Field Information Agency, Technical (West Germany) no. 709, Final rept., 1946, p. 310-319, 319a-319g (PB-33220).

DESCRIPTORS: *Combustion chamber gases, *Ignition, Ignition lag, *Fuels, Knocking, Tests, *Airplane engines, Combustion, Thermodynamics.

Erdmann-Jesnitzer, F. and Klaas, H.
CONTRIBUTION TO THE STABILIZATION OF BARE-WIRE-ARCS. [1962] [17]p. 6 refs.
Order from SLA $1.60 62-20097

Trans. of Schweisstechnik (Germany) 1955, v. 5, no. 7, p. 193-198.

DESCRIPTORS: *ARC welding, *Electrodes, Stabilization, Aluminum alloys, Aluminum coatings, Coatings, Salts, Potassium, Sodium, Barium, Lithium, Strontium

The purpose was to find out whether the arc stability of bare wire of the composition 0.06-0.12%C, ~0.06%Si, ~0.5 to 0.7%Mn, <0.03%P, <0.03%S could be improved by adding Al to the filler wire either as an alloying element or as a separate coating, and, further, whether stabilization can be obtained by very thin coatings containing readily ionizable elements. Alloying the steel wire with Al detracted from the welding properties. Very thin coatings containing K, Na, Ba, Li and Sr salts were applied to the bare wire and the arc stability could thus be improved. It was established that the maximum arc length as determined with d.c. was a linear function of the ionization potential of the stabilizing elements. With coating factors of <1 the addition of K and Na resulted in satisfactory welding performance with a.c.

Manufacturing Equipment and Processes

METHOD OF MANUFACTURE OF ABRASIVE ARTICLES, ESPECIALLY DISCS, AND PRODUCTS OBTAINED BY THIS METHOD. [1962] 4p.
Order from OTS or SLA $1.10 63-10884

Trans. of French patent 1,297,834, appl. 862,670, cl. B 24 d, granted 28 May 62, filed 24 May 61, by Société Anonyme des Usines Chausson.

DESCRIPTORS: *Disks, *Abrasives, Phenolix resins, Catalysts, Heat treatment, Manufacturing methods.

A support of paper, vulcanized fibers or other material is prepared separately, one face being coated with a very thin layer of synthetic resin, then, in addition, abrasive material powder is mixed in a malaxer with a thermosetting synthetic resin which is very viscous or in powdered form, the mixing being continued until a friable mass is obtained which is reduced to powder and spread over the prepared support before being subjected to a heating which melts, then polymerizes the resin which coats the abrasive grains. The resins used are thermosetting resins of the epoxy or phenolic type. The polymerization catalyst for the resin is added to the latter after it has been placed in the malaxer already containing the powdered abrasive material. The mass of the resin used is from 8 to 12 weight % of the abrasive material employed and the amount of catalyst added to the resin is about 15 weight % of the resin used. The addition of resin and of catalyst into the malaxer is done in several steps. The temperature of curing is increased progressively to about 150°C and the time of curing is about 10 minutes. The abrasive articles prepared are recoated on their abrasive face with a thin layer of resin which is then baked again. (Author)

Berg, A. I.
PROBLEM NUMBER ONE: RELIABILITY. 18 Mar 63 [16]p. (illus. omitted). FTD-TT-63-40. AD-402 445
Order from OTS or SLA $1.60 63-19516

Unedited rough draft trans. of Tekhnika Molodezhi (USSR) 1960 [v. 28] no. 10, p. 7-10.

DESCRIPTORS: Reliability, *Reliability (Electronics), *Quality control, *Molecular electronics.

Khabenskii, M. A.
FROM A PROGRAM MACHINE TO AN AUTOMATIC PLANT. 14 Mar 63 [6]p. FTD-TT-62-1758.
Order from OTS or SLA $1.10 63-19476

Unedited rough draft trans. of mono. Programmnoe Upravlenie Metallo-Rezheshchikh Stankov, Sverdlovsk, 1962, p. 34-37.

DESCRIPTORS: *Automation, *Industrial equipment, *Industrial production, *Control systems, Programming (Computers), Digital computers, Machines, Construction.

Müller, A.
ON THE ELIMINATION OF ECCENTRICITY IN THE MANUFACTURE OF SEAMLESS PRECISION TUBES. May 63.
Order from BISI £3 15s BISI-3226

Trans. of Technische Rundschau [und Allgemeine Industrie- und Handelszeitung] (Switzerland) 1962, no. 4, p. 13 and 15.

DESCRIPTORS: *Pipes, Production, Cylindrical bodies, Cold-working, Stresses, Creep, Drawing (Machine processing)

Prober, P. V.
METHOD OF TRANSFERRING A DRAWING TO VARIOUS POROUS MATERIALS, tr. by L. H. 15 Jan 63, 2p.
Order from OTS or SLA $1.10 63-15436

Trans. of USSR author's certificate 137,036, cl. 75a/13, appl. 7 July 60 (pub. as an abstract in #Byulleten' Izobretenii (USSR) 1961, no. 6)

DESCRIPTORS: Porous materials, *Printing, *Pictures, *Reproduction, Drafting, Materials

The invention suggests a method for transferring a drawing from paper to a porous material (paper, fabrics, wood, etc.) in such a way that the material is, while heating is applied, brought into contact with the drawing filled out on paper with a paint containing a dyestuff, varnish or pigment, capable of sublimation at the temperature of 120-130°C. (Author)

Transport, Traction and Hoist Facilities

Fopp, Tadeusz.
SOME PROBLEMS ASSOCIATED WITH THE CROSSING OF RIVERS BY TRUCKS (Niektore Problemy Pokonywania Rzek Przez Somochody) tr. by H. H. [1959] 10p. H-3244.
Order from OTS or SLA $1.10 59-21013

Trans. of Przeglad Samochodowy (Poland) 1958, no. 2, p. 23-29.

DESCRIPTORS: *Rivers, *Cargo vehicles, Amphibious vehicles, Design, Transportation

The work of improving the design of trucks for the negotiation of rivers, proceeds in the following four directions: (1) improvement of the possibility of immersion of the vehicle by structurally adopting it for operating under water; (2) improving the immersing capabilities of the vehicle with the aid of single means at hand; (3) adapting the vehicle for floating on the surface by making use of means at hand such as attaching appropriate types of tanks containing compressed air all around the vehicles.

Neugebauer, R.
ADEQUATE AND ECONOMIC DESIGN OF CRANE INSTALLATIONS. May 63.
Order from BISI £5 10s BISI-3124

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 9] p. 505-513.

DESCRIPTORS: *Hoists, Design, Installation

MATERIALS

Zhukov, V. S., Krylov, N. A., and Sudakov, V. V.
THE USE OF RADIOACTIVE ISOTOPES FOR THE QUALITY CONTROL OF CONCRETE AND OTHER BUILDING MATERIALS (Primenenie Radioaktivnykh Izotopov dlya Kontrolya Kachestva Betona i Drugikh Stroitel'nykh Materialov). Oct 62 [19]p. 1 ref. RTS-2163.
Order from OTS or SLA $1.60 63-15270

Trans. of mono. Doklady Mezhvuzovskoi Konferentsii po Ispitaniyam Sooruzhenii, Leningrad, 1958, p. 205-214.

DESCRIPTORS: *Radioactive isotopes, Quality control, *Concrete, Buildings, Materials, Tests, Sand, Moisture, Physical properties, Mechanical properties, Attenuation, Compton scattering, Pair production, Gamma rays, X-ray absorption analysis, X-ray diffraction analysis, Radiometers.

Déribéré, Maurice.
TITANIUM COMPOUNDS AND HYGIENE. [1963] 6p. 7 refs.
Order from SLA $1.10 63-14559

Trans. of Ann[ales] d'Hyg[iène Publique, Industrielle et Sociale] (France) 1941, v. 18, p. 133-137.

DESCRIPTORS: *Titanium compounds, Public health, *Oxides, Salts, Decomposition, Inhibition, Anaerobiology, Additives, Drugs, Physical properties, Chemical properties, Medicine, Skin, Ointments, Toxicity, Germicides, Powders, *Fillers.

Tatevos'yan, G.
POLYORGANOSILOXANE LIQUIDS (AT THE EXHIBITION OF ACHIEVEMENTS OF THE NATIONAL ECONOMY). [1962] 4p. (figs. omitted). [DSIR] NLL M 8920.
Order from OTS or SLA $1.10 63-15176

Trans. of Plasticheskie Massy (USSR) 1962, no. 2, p. 77-80.

DESCRIPTORS: Polymers, *Silicones, Methyl radicals, Ethyl radicals, Phenyl radicals, *Oils, Lubricants, Moistureproofing, *Coatings, *Heat-resistant materials.

Adhesives and Sealants

THERMOPLASTIC BOOKBINDING GLUE DISPERSIBLE IN DILUTE ALKALI. [1963] 22p.
Order from OTS or SLA $2.60 63-14341

Trans. of Belg[ian] pat[ent] 499,917, appl. 8 Dec 50, granted 30 Dec 50, pub. 31 Mar 51.

DESCRIPTORS: *Thermosetting plastics, Isocyanate plastics, *Adhesives, Dispersion hardening.

The invention relates to improvements in the art of binding books, catalogs, journals and pamphlets by means of a thermoplastic, organic, polymeric glue. It relates more particularly to thermoplastic, vinyl resin glues for bookbinding whose structure permits their facile dispersion in dilute aqueous alkali and using waste paper in a conventional manner. (Author)

Genzsch, Erwin O.
THE ADHESIVE BONDING OF METALS: PROPERTIES AND CONDITIONS OF APPLICATION, HIGH SHEAR STRENGTH, LOW SPLITTING OR PEELING RESISTANCE. [1963] 22p. 4 refs.
Order from SLA $2.60 63-14748

Trans. of Plastverarbeiter (West Germany) 1961 [v. 12, no. 12] p. 559-563.

DESCRIPTORS: *Metals, *Bonding, *Adhesives, Aircraft industry, *Composite materials, *Thermosetting plastics, Elastomers, Thermal stresses.

Kaliske, G.
STUDIES ON ADHESIVE BONDING OF METALS [PT. II]. 26 Mar 56, 9p. (figs. refs. omitted).
Order from SLA $1.10 62-18339

Trans. of Aluminium (West Germany) 1955, v. 31 [no. 6] p. 275-281.

DESCRIPTORS: *Metals, *Bonding, *Adhesives, Bonded joints, Cements, Tensile properties, Stresses, Corrosion, Fatigue (Mechanics), Sheets, Metal plates.

The article affords a survey of strength research of bonded metal joints, based on a thorough review of the pertinent literature. Furthermore, a series of experimental results dealing with cemented metal joints has been discussed. Thus influence of overlap ratio, sigma $_{0,2}$ limit of the sheet metal material, thickness of sheet, nature of surface of sheet metal, and width of specimen with respect to bonding strength and corrosion resistance were established, and tensile strength of bonded metal joints investigated. There were also discussed the fatigue limits of bonding and experiments carried out with set adhesive substances. The search has been based on both foreign and German adhesive media. (Author) (See also 62-16956)

Ceramics and Refractories

Buss, W.
HOT STAGE MICROSCOPE INVESTIGATIONS OF PROCESS IN GLASS MELTS WITH AND WITHOUT SULPHATE. [1963]. BGIRA/Tr/62/32; no. 522.
Order from BGIRA BGIRA-522

Trans. of Glastechnische Berichte (West Germany) 1962, v. 35, no. 4, p. 167-176.

DESCRIPTORS: *Microscopy, *Glass, *Sulfate glass, Fused materials.

Cheg, Chih-chiang.
THE NEW ERA FOR PORCELAIN. 8 Mar 63 [10]p. FTD-TT-62-1664.
Order from OTS or SLA $1.10 63-19287

Unedited rough draft trans. of K'o Hsüeh ta Chung (Chinese People's Republic) 1962, no. 4, p. 99-100.

DESCRIPTORS: *Ceramic materials, Mechanical properties, Ceramic coatings, Composite materials.

Evseev, V. I.
FERRITES (Ferrity). 1963, 13p. 9 refs. PL-480 Comm.
Order from OTS $0.50 63-11138

Trans. of Elektrichestvo (USSR) 1956, no. 9, p. 23-32.

DESCRIPTORS: Ceramic materials, *Magnetic materials, *Ferromagnetic materials, *Ferrites, Crystal structure, Magnetic properties, Resistance (Electrical), Dielectric constant, Mechanical properties, Specific heat, Thermal conductivity, Thermal expansion, Electrical properties, Alternating current, *Electronic equipment.

Topics include: Structure of ferrites; technology; principal magnetic properties; resistivity, dielectric constant, mechanical and thermal properties; magnetic properties in alternating fields; and, applications of ferrites.

Franck, H.
PROBLEMS OF GLASS TECHNOLOGY. [1963]. BGIRA/Tr/63/15; no. 548.
Order from BGIRA BGIRA-548

Trans. of Silikat Technik (East Germany) 1956, v. 7, no. 5, p. 179-182.

DESCRIPTORS: *Glass.

Mönch, G. C.
GLASS DEWAR FLASKS (QUALITY AND POSSIBILITY OF IMPROVEMENT FOR THE INSULATION OF LIQUIDS AT LOW TEMPERATURES). [May 63].
Order from BGIRA BGIRA-562

Trans. of [Vakuum-Technik] (West Germany) 1952, v. 1, no. 1, p. 9-13.

DESCRIPTORS: *Glass, *Containers, Thermal insulation, Liquids, Low temperature research, Laboratory equipment.

Naruse, Akira; Shimura, Fujio, and Watanabe, Akira.
INVESTIGATIONS INTO THREE-DIMENSIONAL FLOW OF THE THROAT CURRENT IN A MODEL THROAT. Rept. 3 of Studies on the Throat of a Glass Melting Tank. [1963] [34]p. (foreign text included) 5 refs.
Order from SLA $3.60 63-14071

Trans. of [Yogyo Kyokaishi] (Japan) 1959, v. 67, no. 3, p. 85-95.

DESCRIPTORS: *Glass, *Melting, *Fluid flow, Glycerols, Velocity, Models (Simulation), Heat transfer, Equations, Test equipment, Tests.

See also 60-18542

Rodnikova, V. V.
HEAT TRANSFER BY RADIATION IN MOLTEN GLASS. [1963]. BGIRA/Tr/63/16; no. 549.
Order from BGIRA BGIRA-549

Trans. of Steklo i Keramika (USSR) 1949, v. 6, no. 3, p. 10-14.

DESCRIPTORS: *Heat transfer, *Glass, *Thermal radiation, Fused materials.

Schmid, O. and Gliemeroth, G.
SLAGGING TESTS ON REGENERATOR CHECKER BRICKS AT VARIOUS TEMPERATURES IN A REVOLVING FURNACE. [May 63].
Order from BGIRA BGIRA-553

Trans. of Tonindustrie-Zeitung (West Germany) 1962, v. 86, no. 20, p. 497-504.

DESCRIPTORS: Slags, *Brick, Temperature, Furnaces.

Stuckert, Ludwig.
ON THE ATTACK OF ALKALI CHLORIDE VAPORS ON FIREPROOF BRICKS. [1963] [20]p. (figs. omitted) 7 refs.
Order from SLA $1.60 63-14352

Trans. of Sprechsaal (Germany) 1933, v. 66, p. 573-574, 591-594.

DESCRIPTORS: *Refractory materials, *Brick, *Chlorides, Salts, *Vapors, Tests.

A test arrangement is described for testing fireproof bricks as to their resistance to dry and wet alkali chloride vapors and the results found in these tests with various sorts of bricks are given. The behavior of the various sorts of bricks is evaluated on the basis of microscopic tests as to appearance, vitrification, changes in volume as well as of microscopic comparisons of the original samples with the samples changed by the attack of the salt vapor. The working procedure is developed into a comparing testing method for the resistance of fireproof materials to salt vapors and the characteristic differences in the behavior of the various materials is stressed. (Author)

Turk, R. and Schwartz-Bergkampf, E.
CALCULATION METHODS FOR HIGH TEMPERATURE REGENERATORS IN THE METALLURGICAL INDUSTRY. [May 63].
Order from BGIRA BGIRA-552

Trans. of Radex-Rundschau (Austria) 1962, no. 6, p. 311-331.

DESCRIPTORS: Purification, *Metallurgy, Industries, Temperature, Mathematical analysis.

Fuels, Lubricants, and Hydraulic Fluids

DEVICE FOR MEASURING THE LUBRICITIES OF OILS [1963] 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-14295

Trans. of German patent 70,674, 21 Oct 41.

DESCRIPTORS: *Lubricants, *Oils, Friction, Test equipment.

The invention involves a device for the determination of the lubricities of oils by measuring the wear by means of a test specimen pressed against a moving rubbing surface, in which a steel band is used as the rubbing surface. (Author)

Alex, Kurt and Schikorr, Gerhard.
TESTING THE EFFECTS OF FUEL ADDITIVES AND THEIR COMBUSTION PRODUCTS UPON THE MATERIALS USED IN ENGINE CONSTRUCTION. 3 June 48, 16p. (figs. omitted).
Order from SLA $1.60 63-10956

Trans. of unidentified mono., n.p., n.d., 13p.

DESCRIPTORS: *Fuel additives, *Combustion chamber gases, *Corrosion, Castings, Copper, Temperature, Fuels, Internal combustion engines, Iron alloys.

An experimental apparatus is described by means of which the attack by fuel combustion gases upon metals at about 400°, 180° and 70° can be followed quantitatively. Cast iron and copper were used as the test metals. (Author)

Beilikhis, G. A.
A NEW METHOD FOR DECONTAMINATING TETRAETHYLLEAD. [1963] 5p.
Order from OTS or SLA $1.10 63-14301

Trans. of Gigiena i Sanit[ariya] (USSR) 1947, v. 12, no. 11, p. 51-52.

DESCRIPTORS: *Lead compounds, *Ethyl radicals, Fuel additives, *Decontamination, Water, Organic solvents, Kerosene, Decomposition, Acids, Halogen compounds, Buildings, Storage, Soaps, *Fuel contamination.

Broad application of the best of the known antiknock agents - tetraethyllead - causes a problem of decontamination in the production of the ethyl liquids by its mixing with fuel and by use of the leaded fuel. For the decontamination of buildings, equipment and storage places (landing places) there is presented a series of methods. (Author)

Botkin, P. P.
FUEL ADDITIVES, AN EFFECTIVE MEANS FOR RAISING THE MOTOR POWER OF POWER INSTALLATIONS. 21 Feb 63 [13]p. FTD-TT-62-1931; AD-299 671.
Order from OTS $0.50 63-11622

Unedited rough draft trans. of Energomashinostroenie (USSR) 1962 [v. 8] no. 6, p. 26-28.

DESCRIPTORS: *Diesel engines, *Fuel oils, *Fuel additives, Physical properties, Chemical properties, Tests, Sulfur, Scale, Inhibition.

The physico-chemical characteristics and the results of operational tests are given for three Soviet made additives for sulfur-containing diesel fuels. It is shown that the additives effectively increase the motor power and reliability of power installations, as well as decrease wear in the cylinder-piston systems by 50%.

Drexler, Köhler, and Lange.
ATTEMPTS TO IMPROVE DIESEL FUELS BY INCREASING THEIR IGNITION TENDENCIES. [1963] 10p. [figs. omitted] 1 ref.
Order from SLA $1.10 63-14262

Trans. of unidentified German language mono. n. p., n. d.

DESCRIPTORS: *Fuel oil, *Ignition, *Fuel additives, Amnonia, Nitrates, Nitrites, Nitrogen compounds, Oxides, Peroxides, Metals.

It was proposed to add ammonium nitrate to diesel oils in an extremely fine or colloidal state of subdivision. It was found, however, that this method was not practicable. In the course of attempts to synthesize ammonium nitrate from the components of the oil itself, it was found that the presence of oxides of nitrogen in the oil was sufficient to promote ignition. (Author)

Ernst, H. and Widmaier, O.
UNIFORM TEST PROCEDURE FOR DIESEL AND OTTO FUELS ON THE BASIS OF IGNITION LAG MEASUREMENTS. 11 Apr 49 [9]p. (figs. omitted) 11 refs.
Order from SLA $1.10 63-14279

Trans. of German language article from unidentified source, n. d.

DESCRIPTORS: *Fuel oil, Ignition lag, Test methods, Knocking, Combustion, Analysis, Autoignition, Diesel engines.

According to our present information a relation exists between ignition tendency and the knock rating of a fuel, in that the knock rating decreases with rise in ignition tendency and vice versa. This relationship makes it possible to develop, on the basis of ignition lag measurements, a single uniform test procedure for diesel and otto fuels. (Author)

Ernst, Hans.
IGNITION DELAY AND EVALUATION OF FUELS: BASIS FOR THE DEVELOPMENT OF A UNIFORM TEST METHOD FOR DIESEL AND OTTO FUELS [Zündverzug und Bewertung des Kraftstoffs: Grundlagen zur Entwicklung eines Einheitlichen Prüfverfahrens für Diesel- und Ottokraftstoffe]. 26 Jun 47, 32p. (figs. omitted) 26 refs.
Order from OTS or SLA $3.60 63-10993

Trans. of [Deutsche Kraftfahrtforschung (Germany) 1941, no. 63, p. 1-20] (PB-34469).

DESCRIPTORS: *Fuels, *Ignition lag, Test methods, Fuel oil, Diesel engines, Combustion, Combustion chamber gases, Pressure, Temperature, Antiknock.

The behavior of fuels upon transformation in the Diesel engine is at the present time generally evaluated by means of the ignition delay. The reliability and exactness of this evaluation depends both upon the method of measurement used and upon the operating conditions of the engine. A proper consideration of this behavior requires an exact knowledge of these influences. The qualities required of an engine fuel evaluation process are that it be simple, that its results be comparatively uninfluenced by the operating conditions of the engine, and that it be applicable both to Diesel and Otto fuels. Investigations at this Institute have resulted in the development of a process for the measurement of the ignition delay which fulfills these requirements. (Author)

Ernst, H[ans].
IGNITION LAG MEASUREMENT AND FUEL EVALUATION. 17 June 48, 6p. (figs. omitted).
Order from SLA $1.10 63-14276

Trans. of German language article from unidentified source, n. d.

DESCRIPTORS: *Ignition lag, *Fuel oil, Measurement, Test methods, Combustion, Knocking, Combustion chamber gases, Internal combustion engines.

Ernst, H[ans] and Gross, W.
ENGINE METHOD FOR THE TESTING OF DIESEL FUELS [1963] 15p. (figs. omitted) 11 refs.
Order from SLA $1.60 63-14269

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Fuel oil, *Ignition lag, Test methods, *Diesel engines, Measurement.

In order to explain the influence of the various operating conditions upon the ignition delay, studies were carried out by means of a specially developed method of measurement. Test of a fuel by this process evaluates the fuel in terms of its ignition delay. (Author)

Heinze, R. and Marder, M.
DETERMINATION OF IGNITION TENDENCIES OF DIESEL FUELS IN THE LABORATORY. [1963] [13]p. (figs. omitted) 22 refs.
Order from SLA $1.60 63-14263

Trans. from Deutsche Kraftfahrtforschung (Germany) 1938, no. 7.

DESCRIPTORS: *Fuel oil, *Ignition, *Diesel engines, Test methods, Gravimetric analysis, Boiling, Molecular properties.

Herstad, O.
THE DETERMINATION OF THE CETANE NUMBER OF DIESEL FUELS BY MEANS OF THE METHOD OF LIMITED SOLUBILITY IN AQUEOUS ALCOHOL (Bestimmung der Cetanzahl von Dieselkraftsotoffen mittels der Methode der Begrenzten Löslichkeit in Wässrigem Alkohol). [1963] [6]p. (foreign text included) 1 ref.
Order from SLA $1.10 63-10994

Trans. of Oel und Kohle (Germany) 1943, v. 39, no. 43/44, p. 960-962.

DESCRIPTORS: *Fuel oil, *Ignition lag, Solubility, *Alcohols, Water.

Junge, C.
PROCESS FOR THE EXTENSIVE REMOVAL OF ALKALI METAL SALTS FROM COAL. May 63, 700 words.
Order from TTIS TTIS NS 76

Trans. of East German patent 24,144, appl. 19 Oct 58, pub. 22 Oct 62.

DESCRIPTORS: Material separation, Salts, *Alkali metal compounds, *Coal.

Kneule, K.
CONTRIBUTION TO THE STUDY OF THE COMBUSTION PROCESS IN THE HIGH SPEED DIESEL ENGINE. 24 May 48, 34p. (figs. omitted) 24 refs.
Order from SLA $3.60 63-14270

Trans. from Deutsche Kraftfahrtforschung (Germany) 1938, no. 5.

DESCRIPTORS: *Combustion, *Diesel engines, *Fuel oil, *Ignition lag, Pressure, Velocity, Fuel consumption, Fuel injection.

The hitherto published investigations concerning the combustion process in the diesel engine pertained principally to the lower speed range, up to about 1200 r.p.m. In view of the increasing use of high speed automotive diesel engines, the task of extending the evaluation methods hitherto applied only to low speed test engines assumes increased significance. The experiments described below therefore have the purpose of extending these studies over a larger speed range, namely, up to 1800 r.p.m., and thus of bringing into clearer focus the factors influenced by speed variations. Finally, on the basis of the results obtained, an evaluation is made of domestic (German) diesel fuels, and the possibility of using them is tested. (Author)

Köchling, Anton.
DYNAMIC PROCESSES IN KNOCKING COMBUSTION. 18 Dec 47 [76]p. 28 refs.
Order from SLA $7.60 63-14289

Trans. of unidentified mono., Berlin, 1943.

DESCRIPTORS: *Knocking, Combustion, Dynamics, *Fuels, Vibration, Thrust, Autoignition, Ignition, Internal combustion engines, Combustion chamber gases.

The principal purpose of the investigations was to gain an understanding of knocking combustion in all its different manifestations and, in particular, to explain the origin and nature of the dynamic processes. Three different forms of knocking combustion were found, namely, vibratory knock, knock-thrust and autoignition knock. All three knock processes have the common characteristic that they can develop spontaneously from a normally beginning combustion into a gas-dynamic effect which, through its dynamics, can accelerate considerably the course of combustion, and is itself reciprocally stimulated and steadily increased in intensity by the energy of combustion. Vibratory knock is a self-exciting process which can develop under suitable conditions from the confluence of two gas streams (displacement motion and pressure equalization streaming) resulting from normal combustion processes. The knock-thrust is a purely dynamic progressive ignition effect. The development of the thrust results from a thrust ignition which is caused by the confluence of hard gas vibrations. Autoignition knock is induced in a purely thermal manner. It consists in a very rapid progressive ignition and not in a homogeneous inflammation of the residual mixture.

Kubis, J.
THE DETERMINATION OF TETRAETHYLLEAD IN GASOLINE. [1963] 3p. 7 refs.
Order from SLA $1.10 63-10980

Trans. of Chem[icke] Zvesti (Czechoslovakia) 1947, v. 1, p. 72-76.

DESCRIPTORS: *Gasoline, *Lead compounds, *Ethyl radicals, *Polarographic analysis, Bromine.

Kuliev, A. M., Zeinolova, G. A., and Abdinova, A. B.
THE SYNTHESIS AND INVESTIGATION OF ANTI-OXIDANTS FOR POWER-PRODUCING AND OTHER TYPES OF OILS. 12 Feb 63 [12]p. FTD-TT-62-1453.
Order from OTS or SLA $1.60 63-19260

Unedited rough draft trans. of mono. Prisadki k Maslam i Toplivam, Moscow, 1961, p. 102-109.

DESCRIPTORS: Synthesis (Chemistry), *Antioxidants, *Nitrogen compounds, *Hydroxides, *Phosphorus compounds, Condensation reactions, Alkylation, *Oils, *Fuels, Stability.

Losikov, B. V., Fat'yanov, A. D. and others.
THE INFLUENCE OF THE PRODUCTS OF COMBUSTION OF SULFUR-CONTAINING FUEL DISTILLATES ON THE CONSTRUCTION MATERIALS OF GAS TURBINES. 3 Dec 62 [15]p. FTD-TT-62-1026.
Order from OTS $0.50 63-11628

Unedited rough draft trans. of Energomashinostroenie (USSR) 1962 [v. 8] no. 2, p. 34-37.

DESCRIPTORS: *Fuel oils, *Combustion chamber gases, *Gas turbines, *Steel, *Corrosion, Corrosive gases, *Sulfur, Vapors, Protective coverings, *Combustion deposits, Sulfides.

From obtained laboratory data recommendations have been made about experimenting with sulfur-containing diesel fuels in natural gas-turbine plants. The results of these experiments have confirmed the correctness of the laboratory experiments and shown the suitability of sulfur-containing diesel fuel for reliable operation of gas turbine plants. (Author)

Marder, M. and Farrow, H.
CORROSIVE ATTACK BY FUELS. 31 Jan 50 [4]p. (figs. omitted).
Order from SLA $1.10 63-10975

Partial trans. of [Deutsche Kraftfahrtforschung (Germany) 1939, no. 27, p. 15ff].

DESCRIPTORS: *Corrosion, *Fuels, Metals, Gasoline, Sulfur compounds, Alcohols, Temperature.

Mohry, Friedrich.
PHYSICOCHEMICAL FUNDAMENTALS OF COMBUSTION PROCESSES IN THE DIESEL ENGINE. Introduction to Thesis, entitled "The Effect upon Combustion Processes in the Diesel Engine of the Addition of Ignition Promoters, Especially Organic Peroxides, to the Fuel". 18 Mar 48, 10p.
Order from SLA $1.10 63-10998

Trans. from doctoral thesis, n.p., 1936.

DESCRIPTORS: *Diesel engines, *Combustion, Ignition lag, Knocking, Fuel oil, Fuel additives.

Morghen, I.
DETERMINATION OF 1-T FLUID AND ITS AGING PRODUCTS IN AVIATION FUELS (Bestimmung von 1-T Fluid und seinen Alterungs Produkten in Flugkrafstoffen). [1963] 19p. 6 refs.
Order from OTS or SLA $1.60 63-10988

Trans. of German language article from the German Experimental Station for Aircraft e. V., Berlin-Adlershof, n.d. [PB-23976, 1942, pt. of PB-23865].

DESCRIPTORS: *Aviation fuels, Quantitative analysis, Ethyl radicals, Bromides, *Lead compounds, Decomposition, Aging (Materials), Dithizone, Fuel additives.

A rapid method for the determination of the ethyl bromide content of aviation fuels is given. The type of tetraethyl lead decomposition products which form during the aging of fuel containing lead is explained and their determination is described. (Author)

Pelevin, V. S.
VARIATION IN THE LENGTH OF THE COMBUSTION ZONE OF A HOMOGENEOUS MIXTURE IN A TURBULENT FLOW AS A FUNCTION OF PRESSURE. 1 Feb 63 [11]p. 7 refs. FTD-TT-62-1744. AD-400 551
Order from OTS or SLA $1.60 63-19499

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 6, p. 3-7.

DESCRIPTORS: Fuels, Gasoline, *Combustion, Pressure, Turbulence, Flame propagation, Air, Mixtures.

The results of an experimental investigation of the length of the combustion zone as a function of pressure (below atmospheric) during the burning of a homogeneous mixture in a turbulent flow are set forth. The investigation was conducted with the aid of a burner using an air mixture of grade B-70 gasoline. (Author)

Philippovich, Alexander.
POSSIBILITY OF CHARACTERIZING COMBUSTION BEHAVIOR AND ITS RESPONSE TO VARIATIONS IN DESIGN AND OPERATION. [1963] 13p. 8 refs.
Order from SLA $1.60 63-14285

Trans. from German typescript of mono. Die Betriebsstoffe für Verbrennungs Kraftmaschinen (Combustion Characteristics of Fuels in Different Engine Cylinders) Vienna, 1949, p. 3-11.

DESCRIPTORS: *Fuels, Combustion, Internal combustion engines, Knocking, Ignition, Temperature, Pressure, Detonation, Test methods, Power, Fuel consumption.

Poppinga, Reemt.
THE DETECTION OF THE BREAKDOWN OF LUBRICANT FILMS BY MEASUREMENT OF THE ELECTRICAL RESISTANCE BETWEEN THE PISTON RING AND THE CYLINDER. 9 Mar 48, 16p. (figs. omitted) 12 refs.
Order from SLA $1.60 63-14294

Partial trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Lubricants, Films, Measuring devices (Electrical and electronic), Electric potential, Resistance (Electrical), Piston rings, Engine cylinders, Internal combustion engines, Degradation.

An attempt is made to measure the electrical resistance between the running surfaces of the piston ring and cylinder, as an indication of the condition of the lubricant film between the two surfaces. For this purpose, a measuring apparatus was developed which made it possible measure potential differences between ring and cylinder of the order of fractions of a millivolt (mV) or resistance variations of a few thousandths of an ohm (mΩ), while the engine is in motion and without appreciable time lag. (Author).

Potthoff.
USE OF THE TWO FUEL PROCESS IN DIESEL ENGINE. 15 June 48, 2p.
Order from SLA $1.10 63-14287

Abstract trans. of unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Fuel oil, Mixtures, *Diesel engines, Gases, Liquids, Butanes, Operation.

Ramaya, K. S., Borovaya, M. S., and Sil's, R. Kh.
A LABORATORY STUDY OF THE ANTIOXIDATION EFFECTIVENESS OF MOTOR-OIL ADDITIVES. 10 Jan 63 [10]p. FTD-TT-62-1324.
Order from OTS $0.50 63-11621

Unedited rough draft trans. of mono. Prisadki k Maslam i Toplivam, Moscow, 1961, p. 269-272.

DESCRIPTORS: *Lubricants, *Oils, Mineral oils, *Additives, *Antioxidants, Tests, Oxygen, Absorption.

Three Soviet methods of ascertaining the antioxidation effectiveness of motor oil additives are compared and interpreted.

Rixmann.
LIQUID AND GENERATOR GAS OPERATION OF DIESEL ENGINES: SUMMARY OF EARLY EXPERIMENTATION AND RESULTS. 15 June 48, 2p.
Order from SLA $1.10 63-14275

Trans. from unidentified mono., n.p., n.d.

DESCRIPTORS: *Fuels, *Diesel engines, Liquids, Gases, Operation, Ignition, Power, Tests.

Schmidt, A. W. and Beck, H.
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. VIII, 1. [1963] 11p.
Order from SLA $1.60 63-14255

Trans. from unidentified German language mono., n.p., 12 Oct 40.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Ignition, Knocking, Acetylenes, Peroxides, Organic compounds, Nitrogen compounds.

Extensive engine studies, using the Triumph engine, established the following results: (1) Kogasin from the Fischer-Tropsch synthesis, which knocks excessively in vaporizer operation, was found to be particularly suitable for use in the Triumph engine. (2) Under certain circumstances, additions of peroxides and nitro compounds increase the ignition tendency of the base fuel. (3) Variation of the injection point is of fundamental significance and requires further study. (4) With gaseous additives, the engine runs irregularly even at high speeds (vapor lock knock). (5) The smoothness of operation rises with the speed, and is very satisfactory at the investigated speeds in the neighborhood of 3500 r.p.m. (Author) (See also 63-14254)

Schmidt, A. W. and Beck, H.
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN: TREATMENT OF FUELS (CHEMICAL PART) COMMUNICATION NO. XI, 1. [1963] 8p.
Order from SLA $1.10 63-14256

Trans. from unidentified German language mono., n.p., 3 Feb 41.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Ignition, Refining, Sulfuric acid, Methyl radicals, Alcohols, *Ozone.

Neither refining with sulfuric acid nor selective extraction with methyl alcohol yields any improvement in ignition tendency in the absence of ozone treatment. Ozone treatment raises the cetane number by an amount corresponding to the duration of the treatment, both for unpretreated fuel and for fuel pretreated with sulfuric acid or with methyl alcohol. If the ozonization takes place prior to selective extraction with methyl alcohol, the cetane number is lower than that obtained with the same degree of ozonization but without extraction. (With subsequent extraction the same cetane number (82) may be obtained by doubling the duration of ozonization). If, however, the ozonization follows the extraction, an extraordinarily significant rise in cetane number is found. Even simple oxygen-treatment raises the cetane number. As an additive, ethyl nitrate is superior to amyl nitrite; nitrobenzene appears to be unsatisfactory; tetralin peroxide is the best of the peroxide additives; Lupanol caused the greatest rise in cetane number of any of the additives. (Author) (See also 63-14255)

Schmidt, A. W. and Beck, H.
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. XVII, 1 (FRAGMENT). [1963] 3p.
Order from SLA $1.10 63-14260

Trans. from unidentified German language mono., n.p., 1941.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, Gasoline, Nitration, Ignition, Ozone, Nitrates, Ethyl radicals, Nitrogen compounds, Methyl radicals, Urethanes, Chloroform.

Topics include the treatment of brown coal gasoline with nitration acid, and additions to brown coal gasoline. (See also 63-14259)

Schmidt, A. W. and Beck, H.
STUDIES ON HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. VII, 1 (CHEMICAL PART). [1963] 5p.
Order from SLA $1.10 63-14253

Trans. from unidentified German language mono., n.p., 29 July 40.

DESCRIPTORS: Hydrocarbons, *Fuel oil, *Fuel additives, *Peroxides, Hydroxides, Methyl radicals, Ethyl radicals, Oxygen.

(See also 63-14252)

Schmidt, A. W. and Beck, H.
STUDIES ON HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN: TREATMENT OF FUELS (CHEMICAL PART) COMMUNICATION NO. XIX, 1. [1963] 8p.
Order from SLA $1.10 63-14261

Trans. from unidentified German language mono., n.p., 6 Dec 41.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, Distillation, Refining, Nitration, Sulfuric acid, *Ignition, Nitrogen compounds, Chloroform.

The redetermination of the cetane values of the individual fractions shows again the rise of ignition tendency with the boiling point, the highest boiling fraction having the most favorable cetane value. Mixed refining by means of alkali and acid does not result in any notable change in the ignition tendency. Refining with sulfuric acid results in a rising improvement in the ignition tendency as the acid concentration increases; however, the total extent of the improvement is small. The nitration treatment yields the following very informative results: (a) The combined treatment with nitration acid is superior to treatment with sulfuric acid alone. (b) The highest effective cetane value is attained using the middle fractions of the primary product (boiling at about 200°). (c) Rather unexpectedly, the increase of ignition tendency is found to extend over the entire boiling range. (d) The efficiency of nitration is highest for the low-boiling fractions and falls gradually as the end of the distillation is approached. The ignition tendency is increased by the addition of 4% chloropicrin from 116 to 158 cetane (=185 cetene). (Author) (See also 63-14260)

Schmidt, A. W. and Beck, H.
STUDY OF METHODS OF INCREASING THE REACTIVITIES OF FUELS FOR INTERNAL COMBUSTION ENGINES, COMMUNICATION NO. XXI, 1 (CHEMICAL PART). [1963] 9p.
Order from SLA $1.10 63-14264

Trans. from unidentified German language mono., n.p., 6 Mar 42.

DESCRIPTORS: *Fuels, *Ignition, *Nitration, Internal combustion engines, Nitric acid, Sulfuric acid, Toluenes, Nitrogen compounds, Oxides, Reaction kinetics.

Nitration with mixed acids resulted in a rise in ignition tendency for all fuels treated. The smallest rise is shown by cyclohexane and the two petroleum gasolines, the largest by brown coal gasoline. Nitration with mixed acids causes a steeper rise in the case of the primary product (100-285°) than in that of Kogasin II (180-300°). Addition of toluene to this primary product merely reduces the cetane numbers, without changing the intensity of the nitration effect. Of the nitrating agents, the mixed acids are the most efficient; then follows the gas treatment, then the treatment with pure nitric acid, and finally that with aqueous nitric acid. The last never results in any rise in ignition tendency. (Author)

Schmidt, A. W., Beck, H., and Kneule, F.
STUDIES ON HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. VI, 1: ENGINE STUDIES. [1963] 6p. (figs. omitted).
Order from SLA $1.10 63-14251

Trans. from unidentified German language mono., n.p., 6 June 40.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, Autoignition, *Fuel additives, *Peroxides, Acetylenes, Acetones, Benzils, Ethyl radicals, Naphthalenes, Hydrogen compounds, Gasoline.

The various peroxide additives investigated, as well as the use of acetylene alone and with a solution agent, yield fundamental and, in part, farreaching changes in the engine behavior of the brown coal gasoline used as a base fuel. It may be expected that, through simultaneous admixture with the base fuel of various types of additives in suitable proportions, very favorable combined effects will be obtained. (Author)

Schmidt, A. W. and Beck, H.
STUDIES ON HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. VII, 1 (CHEMICAL PART). [1963] 6p.
Order from SLA $1.10 63-14252

Trans. from unidentified German language mono., n.p., 3 July 40.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Peroxides, Hydroxides, Ethyl radicals, Methyl radicals, Hydroperoxides, Solubility.

(See also 63-14251)

Schmidt, A. W. and Beck, H.
STUDY OF METHODS OF INCREASING THE REACTIVITIES OF FUELS FOR INTERNAL COMBUSTION ENGINES, COMMUNICATION NO. 25. [1963] 6p.
Order from SLA $1.10 63-14265

Trans. from unidentified German language mono., n.p., 18 Dec 42.

DESCRIPTORS: *Fuels, *Ignition, Reaction kinetics, Internal combustion engines, *Fuel additives, *Fuel oil, Ethyl ethers, Ethyl radicals, Lactates, Pentonones, *Alcohols, Nitration.

Acetoacetic ester is a hydrocarbon of cetane number 40, suitable for use as a diesel additive. Ethyl lactate is not a suitable ignition promoter, even after nitration. Diacetone alcohol also has no ignition promoting effect, even after nitration. The alcohols fenchol and linalool dissolve with ease in Kogasin II, but have low cetane numbers, which cannot be sufficiently increased by nitration. In particular, the improvement is insignificant in the case of fenchol. Oleyl alcohol is miscible in all proportions with Kogasin II. It is a diesel fuel of high cetane number (72) which can be considerably increased by nitration (to 160). The product of the nitration of Kogasin II together with primary normal decyl alcohol has a cetane number of 220-230. This is the highest value which we have measured up to the present time. (Author) (See also 63-14267)

Schmidt, A. W., Beck, H., and Kneule, F.
STUDY OF METHODS OF INCREASING THE REACTIVITIES OF FUELS FOR INTERNAL COMBUSTION ENGINES, COMMUNICATION NO. XXIII. [1963] 2p.
Order from SLA $1.10 63-14266

Trans. from unidentified German language mono., n.p., 20 June 42.

DESCRIPTORS: *Fuels, *Ignition, Reaction kinetics, Internal combustion engines, Fuel additives, Diesel engines.

(See also 63-14264)

Schmidt, A. W. and Mohry, F.
THE INFLUENCE UPON COMBUSTION PROCESSES IN DIESEL ENGINES OF ADDITION TO THE FUEL OF IGNITION PROMOTORS, PARTICULARLY ORGANIC PEROXIDES. [1963] [17]p. 11 refs.
Order from SLA $1.60 63-10995

Trans. of Oel und Kohle (Germany) 1940, v. 36, no. 13, p. 122-128.

DESCRIPTORS: *Combustion, Fuel oil, Diesel engines, *Ignition, *Fuel additives, Organic compounds, *Peroxides.

Schmidt, A. W. and Kneule, [F].
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN (ENGINE PART) COMMUNICATION VII, 2. [1963] 8p.
Order from SLA $1.10 63-14254

Trans. from unidentified German language mono., n.p., 3 Aug 40.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, Internal combustion engines, Benzenes, Petroleum, Gasoline, Knocking.

(See also 63-14253)

Schmidt, A. W., Kneule, F., and Beck, H.
STUDY OF METHODS OF INCREASING THE REACTIVITIES OF FUELS FOR INTERNAL COMBUSTION ENGINES, COMMUNICATION NO. 24. [1963] 11p.
Order from SLA $1.60 63-14267

Trans. from unidentified German language mono., n.p., 6 Oct 42.

DESCRIPTORS: *Fuels, *Ignition, Reaction kinetics, Internal combustion engines, *Fuel additives, Acetonitriles, Camphors, Styrenes, Esters, Aldehydes, *Alcohols, Glycol, Hydrocarbons, Nitration.

Various pure hydrocarbons were investigated with respect to their influence upon the ignition tendencies of fuels. All esters studied reduced the cetane number. Pseudocumene and para-cymene reduced the cetane number. Four basically different aldehydes were studied. Crotonaldehyde was practically without influence; the aromatic compounds benzaldehyde and cinnamaldehyde reduced the cetane number; the aliphatic enanthaldehyde caused an increase in the cetane number. Of six different alcohols, diacetone alcohol reduces the cetane number, as do normal primary propyl and hexyl alcohols. An increase in cetane number corresponding to increase in the chain length appears first in the series: octyl, nonyl and decyl alcohols. Nitrated alcohols of the paraffin series, from hexyl alcohol on, have a very considerably increased ignition tendency; we obtained cetane numbers of about 190, our highest value to date. Nitrated glycol dissolves only in limited amounts in brown coal gasoline and yields a small increase in cetane number. (Author) (See also 63-14266)

Staiger, K.
DESCRIPTION OF THE FKFS IGNITION DELAY MEASURING APPARATUS. 7 June 48, 10p. (figs. omitted) 2 refs.
Order from SLA $1.10 63-14272

Trans. of unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Ignition lag, Measurement, Test equipment, Internal combustion engines.

A description is given of a process developed at the FKFS which permits the measurement of the ignition delay in diesel engines. The ignition delay is read directly from an instrument graduated in crankshaft degrees. (Author)

Stallechner, K.
IGNITION DELAY MEASUREMENTS BY MEANS OF PHOTOCELLS SENSITIVE TO VARIOUS WAVELENGTH REGIONS. 26 Nov 47 [26]p. 25 refs.
Order from SLA $2.60 63-10996

Trans. of German language article from unidentified source, n.p., n.d.

DESCRIPTORS: *Ignition lag, *Fuel oil, *Phototubes, Laboratory equipment, Measurement.

The ignition delays of Diesel fuels were studied by means of photocells in the Wentzel experimental bomb. The ignition delay is the time which elapses from the beginning of injection of the fuel until the first radiation sets in. A process is mentioned which makes possible the rapid recording of the beginning of the radiation for any wavelength, using photocells and color filters which

yield various transmissions for the visible wavelength region. A method is also described of sampling the injected fuel jet by means of diaphragms. The fuel jet mantle was divided into three parts with diaphragms. Five fuels (three German and two American gas oils), investigated with the red-sensitive cells, yielded almost the same absolute ignition delay value of 1.7×10^{-3} to 1.8×10^{-3} second for all the gas oils for the temperature region usually found in the motor. It is shown that the ignition delay is determined in a relatively simple manner with the photocells, and that differences in radiation due to combustion are very well reproduced. (Extract)

Widmaier, O.
FKFS TRICHLORACETIC PROCESS FOR QUANTITATIVE LEAD DETERMINATION IN FUELS. [1963] [1]p.
Order from SLA $1.10 63-10985

Summary trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Lead compounds, *Ethyl radicals, Quantitative analysis, *Fuels, Chorides, Acetic acids, Gravimetric analysis.

A laboratory process was developed for the determination of lead tetraethyl in fuels containing peroxide and large amounts of olefin. The lead tetraethyl in the fuel is converted to lead chloride by treatment with trichloracetic acid, and the lead is finally determined gravimetrically as chromate. The time required for a single determination is about 30 minutes. (Author)

Widmaier, O.
INFLUENCE OF SULFUR COMPOUNDS UPON THE KNOCK RATING AND RESIDUE FORMATION IN LEADED FUELS. 28 Apr 47, 12p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.60 63-14309

Trans. of mono. [Einfluss von Schwefelverbindungen auf die Klopffestigkeit und Ruckstandsbildung bei Verbleiten Kraftstoffen] n.p., n.d., 7p. (PB-24136).

DESCRIPTORS: *Fuels, *Lead, Sulfur compounds, Knocking, Colloids, *Fuel additives.

In general the addition of tetraethyllead to fuels calls forth a certain reaction, varying with the type of fuel, which results in an increase in the knock rating. This so-called lead sensitivity depends upon the composition of the fuel and upon its treatment. It is very high for the so-called straight-run fuels and comparatively low for cracked fuels. Since sulfuric acid is frequently used in the refining process the belief persists that traces of sulfur remaining in the fuels have an unfavorable effect. Artificially added sulfur compounds have, in fact, a significant effect. The results of the investigation show the influence of sulfur compounds upon the knock rating. In addition, a discussion is given of gum formation in sulfur-bearing leaded fuels and their stability to light. (Author)

Widmaier, O.
A MORE SIMPLIFIED RAPID METHOD FOR THE DETERMINATION OF TETRAETHYLLEAD IN AIRCRAFT ENGINE FUELS. 17 Feb 48, 8p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-10955

Trans. of mono. [Weiter Vereinfachtes Schnellverfahren zur Bestimmung des Bleitetraäthylgehaltes in Flugmotorenkraftstoffen] n.p., 13 July 40 [13p.] (PB-36649).

DESCRIPTORS: *Aviation fuels, *Lead compounds, *Ethyl radicals, Quantitative analysis, Iodine, Alcohols, Solutions, Fuels.

The tetraethyllead content of aviation fuels has been determined in the past either gravimetrically as lead chromate and lead sulfate, or volumetrically by precipitation with excess potassium chromate and back titration of the excess. These methods yield good results, but have the disadvantage that a tetraethyllead determination requires 2 to 4 hours. The method recently developed in the FKFS, in which iodine is added to tetraethyllead in the form of a 1/10 normal aqueous iodine solution, resulted in considerable simplification. Further simplification and shortening of the time can be achieved by using an alcoholic iodine solution in place of the aqueous solution since, under these conditions, the unsaturated hydrocarbons are no longer attacked, and saturation of the solution with trichloracetic acid is no longer necessary. (Author)

[Widmaier, O.].
TEST OF LABORATORY PROCESSES FOR THE DETERMINATION OF THE LEAD CONTENT OF FUELS. 10 Feb 47, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10954

Condensed trans. of mono. [Prüfung von Laboratoriumsverfahren zur Bestimmung des Bleigehaltes in Kraftstoffen, n.p., Apr 41, 27p.] (PB-37128).

DESCRIPTORS: *Fuels, *Lead, Quantitative analysis, Test methods, Iodine, Chromates, Volumetric analysis, Sulfates, Hydrochloric acid, Dithizone.

Leather and Textiles

PROCESS AND MACHINE FOR TREATING WEARING APPAREL, FABRICS AND OTHER ARTICLES FOR THE PURPOSE OF CLEANING OR DYEING, tr. by J. B. 28 Nov 62, 38p. (figs. omitted).
Order from OTS or SLA $3.60 63-13744

Trans. of French patent 843,940, gr. 16, cl. 5, by Georges Levy, appl. 19 Mar 38, granted 11 Apr 39, pub. 12 Jul 39.

DESCRIPTORS: *Clothing, *Textiles, Processing, Machines, *Cleaning, *Dyeing.

PROCESS FOR SOFTENING LEATHER OR LEATHER SUBSTITUTES. [1963] 1p.
Order from OTS or SLA $1.10 63-14338

Trans. of Austrian patent 89,789, 25 Oct 22.

DESCRIPTORS: *Leather, Substitutes, Lubricants, Fatty acids, Hydroxides, Methyl radicals, Ethyl radicals.

The invention concerns a process for softening leathe s or leather substitutes distinguished by the fact that leather is treated with methyl, ethyl or amyl esters of hydroxy fatty acids or mixtures of these esters. Mixtures of the above esters with neutral fats may be employed. (Author)

SPINNING OF POLYALKYLENE FIBERS WITH ROUND CROSS SECTION. 14 June 62, 6p.
Order from OTS or SLA $1.10 63-10833

Trans. of French patent 1,226,310, by Courtaulds Ltd., Gt. Brit., appl. 4 June 59, granted 22 Feb 60, pub. 11 July 60 (pat. appl. filed in Gt. Brit. 4 June 58).

DESCRIPTORS: *Fibers (Synthetic), *Ethylenes, *Propenes, *Polymers, Spin, Water, Manufacturing method, Polyethylene plastics.

A method for producing polyalkylene fibers with a round cross section, which consists in passing the hot, freshly extruded fibers through water at a temperature of at least 60°C. is described. The temperature is maintained by the heat released by the fibers passing through the water.

Bobeth, Wolfgang and Kittelmann, Walter.
ON THE CAUSES OF STRENGTH LOSS OF RAYON-CORD YARNS. [1962] 13p. 13 refs.
Order from SLA $1.60 63-10752

Trans. of Faserforschung und Textiltechnik (Germany) 1962, v. 13, no. 7, p. 293-299.

DESCRIPTORS: *Rayon, Threads, Cordage, Tires, Tensile properties, Stretch forming.

The strength loss of rayon cord yarns is influenced by the yarn geometry, yarn construction as well as spinning and testing conditions. In a given rayon yarn the individual filaments do not remain in determined concentric layers but wander through many layers. A uniform tension distribution is not always assured for it depends on many conditions. As the coefficient of friction decreases so should the strength loss for the tension distribution becomes more uniform. The type, quantity and distribution of yarn finish influence considerably the friction coefficient and thus the strength loss. At constant finishing and twisting, increased stretching results in increased strength loss. (Author)

Butorina, E. F. and Matveev, Yu. I.
DETECTION OF DEFECTS IN ACETATE RAYON BY MICROANALYSIS (Obnaruzhenie Defektov Atsetatnogo Shelka s Pomoshch'yu Mikroanaliza). 4 June 62 [6]p. (foreign text included).
Order from OTS or SLA $1.10 63-10812

Trans. of Khim[icheskie] Volokna (USSR) 1960, no. 6, p. 57-58.
Another trans. is available from OTS or SLA $1.10 as 62-15374, DSIR NLL M.3237, 27 Mar 61, 4p.

DESCRIPTORS: *Cellulose acetates, *Rayon fibers, *Synthetic fibers, Plastics, Textile industry, Detection, Microanalysis.

Bykova, I. V.
THE USE OF HOMOGENIZERS IN SIZING, tr. by I. Gawronska. 2 Jan 62 5p. 2 refs. Courtaulds Misc. Lit. 3432; [DSIR] NLL M.3612.
Order from OTS or SLA $1.10 62-25285

Trans. of Tekstil['naya] Prom[yshlennost'] (USSR) 1961, v. 21, no. 6, p. 45-47.

DESCRIPTORS: *Textiles, Sizing, Starches, Decomposition.

Sugita, Hide.
CORD. [1963] 1p.
Order from OTS or SLA $1.10 63-14652

Trans. of Japanese patent 2,963, appl. 16 Mar 1897. granted (effective for 10 years) 15 Oct 1897.

DESCRIPTORS: *Cordage, Wool, Silk, Clothing.

This patent relates to a cord, fabricated by tightly encasing several strands of wool in a silk tube and binding the ends of the core and the tube. The purpose of the invention is to provide a cord, which, unlike an elastic rubber cord, does not leave marks on the skin and which does not shrink or elongate after long use or washing.

Svaty, V.
OUR EXPERIENCE IN THE PRODUCTION OF SHUTTLELESS LOOMS (Nash Opyt po Sozdaniyu Beschelochnykh Tkatskikh Stankov). Apr 63 [8]p. RTS-2198.
Order from OTS or SLA $1.10 63-19129

Trans. of Tekstil[naya] Prom[yshlennost'] (USSR) 1961, v. 21, no. 7, p. 82-85.

DESCRIPTORS: *Textile industry, *Machines, Fibers, Processing.

Virnik, A. D. and Chekalin, M. A.
INTERACTION OF REACTIVE DYES WITH α-AMINO ACIDS AND SILK (Vzaimodeistvie Reaktsionnosposobnykh Krasitelei α-Aminokislotami i Shelkom). Apr 63 [4]p. 1 ref. RTS-2216.
Order from OTS or SLA $1.10 63-19132

Trans. of Vsesoyuz[noe] Khim[icheskoe] Obshchestvo. Zhur[nal] (USSR) 1961, v. 6, p. 236-237.

DESCRIPTORS: *Dyes, Chemical reactions, Fibers (Natural), *Amino acids, *Silk.

Zak, A. F.
PHYSIOCHEMICAL PROPERTIES OF GLASS FIBER. 9 May 63, 282p. 149 refs. JPRS: 19122.
Order from OTS $4.00 63-21793

Trans. of mono. Fiziko-Khimicheskie Svoistva Steklyannogo Volokna, Moscow, 1962, 224p.

DESCRIPTORS: *Glass textiles, Production, Mechanical properties, Fibers, Dielectric properties, *Fire resistant textiles, Structural properties, Plastics, Physical chemistry.

The book gives concise information on the existing methods of producing glass fiber for various purposes. The most important properties of glass fiber and objects based on it, the dependence of these properties on factors of various natures are presented in detail, and the existing theories on the structure of glass fiber are critically discussed. The book is designed for technical engineers and scientists of the glass fiber industry. It can also be used by university students and consumers of objects of glass fiber and glass plastics. (Author)

Paints and Finishes

PROCESS FOR THE PREPARATION OF LACQUERS AND IMPREGNATION MATERIALS. [1963] 6p.
Order from OTS or SLA $1.10 63-14358

Trans. of Danish pat[ent] 59,092, pub. 6 Oct 41, by I. G. Farbenindustrie A. -G.

DESCRIPTORS: Materials, *Impregnation, *Varnishes, Preparation

The invention concerns a process for preparation of lacquers and impregnating agents, remaining water-resistant after drying at ordinary temperatures by use of high molecular weight polymers distinguished by the fact that polymeric resins prepared from unsaturated carboxylic acids like acrylic, methacrylic, cinnamic and especially crotonic acid and polymerizable olefins are dissolved in weak alkaline aqueous solutions. The weak alkalies are volatile nitrogen bases. (Author)

Dolgopol'skaya, M. A., Gurevich, E. S., and Shapiro, E. Z.
THE INFLUENCE OF BACTERIAL FILM ON THE LEACHING OF POISONS FROM A LAYER OF ANTIFOULING PAINT (Vliyanie Bakterial'noi Plenki na Protsess Vyshchelachivaniya Yadov iz Protivoobrastayushchego Krasochnogo Sloya). Apr 63 [10]p. 6 refs. RTS-2235.
Order from OTS or SLA $1.10 63-15968

Trans. of A[kademiya] N[auk] SSSR. Sevastopol'skaya Biologicheskaya Stantsiya. Trudy, 1960, v. 13, p. 309-314.

DESCRIPTORS: *Antifouling coatings, *Bacteria, Films, Solubility, Poisoning, Sea water, Solvent action, *Paints, Waxes, Cellulose ethers, Copper, Marine engineering, Tests.

Rosin and paraffin wax are both broken down by the action of bacteria, as a result of which the leaching of copper from paints containing rosin and paraffin wax is intensified. Rosin promotes the activity of bacteria. The number of bacteria present in a sample of sea water containing a rosin based film of paint is 8 times the number present in a control sample. In the case of the leaching of copper antifouling paints, having a rosin or paraffin wax matrix the copper concentration in bacteria-enriched sea-water is 2 - 4 times greater than in sterile sea water. (Author)

Photographic Materials

Arnol'd, Ts. S. and Krylov, L. P.
PROCESSING OF COLOR NEGATIVE FILMS. [1963] 10p.
Order from ATS $12.50 ATS-61Q68R

Trans. of Tekhnika Kino i Televideniya (USSR) 1961, v. 5, no. 3, p. 13-19.

DESCRIPTORS: *Color film, *Photographic processors, Photographic chemicals.

Blyumberg, I. B., Zyazina, T. M. and others.
INVESTIGATION OF THE QUALITY OF PHOTOGRAPHIC IMAGE IN IMMERSION PRINTING [Issledovanie Kachestva Izobrazheniya Poluchaemogo Immersionnoi Pechat'yu]. [1963] 9p.
Order from ATS $7.95 ATS-78Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) [1962] v. 6, no. 5, p. 34-39.

DESCRIPTORS: Acceptability, *Photographic images, *Photographic printers, *Printing

Iordanskii, A. N., Kilinskii, I. M., and Vilenskii, Yu. B.
A NEW SERIES OF COLOR MOTION PICTURE FILMS. [1963] 12p.
Order from ATS $14.50 ATS-60Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1961, v. 5, no. 3, p. 4-13.

DESCRIPTORS: *Color film, *Motion picture film.

Khotyanovich, S. I. and Giken, A. Yu.
ON THE PROBLEM OF MAKING OF ELECTROPHOTOGRAPHIC IMAGES IN LIQUID DEVELOPERS. [1962] 10p. 4 refs.
Order from OTS or SLA $1.10 63-10727

Trans. of Zhur[nal] Nauch[noi] i Prikl[adnoi] Fot[ografii] i Kin[ematografii] (USSR) 1962, v. 7, no. 1, p. 30-35.
Other translations are available from OTS or SLA $1.10 as 62-18592 [1962] 8p. and 62-20374 [1962] 6p.

DESCRIPTORS: *Electrophotography, *Photographic images, Processing, Liquids, *Photographic chemicals, Dyes, Carbon compounds, Chlorides.

Makarov, N. V. and Shevyakov, G. G.
NEW HIGH-SPEED ISOPANCHROMATIC MOTION PICTURE FILM, TYPE VCh. [1963] 3p.
Order from ATS $4.50 ATS-71Q68R

Trans. of Tekhnika Kino i Televid[eniya] (USSR) 1962, v. 6, no. 9, p. 49-50.

DESCRIPTORS: High-speed photography, *Motion-picture film, Sensitivity, *Color film.

Ramazanov, K. A.
SOME IMPROVEMENTS IN THE MANUFACTURING TECHNOLOGY AND IMPROVEMENT OF QUALITY OF ELECTROPHOTOGRAPHIC FILMS. [1962] 14p. 9 refs.
Order from OTS or SLA $1.60 63-10726

Trans. of Zhur[nal] Nauch[noi] i Prikl[adnoi] Fot[ografii] i Kinem[atografii] (USSR) 1961, v. 6, no. 6, p. 440-447.
Another trans. is available from OTS or SLA $1.60 as 62-18597 [1962] 12p.

DESCRIPTORS: *Electrophotography, Materials, Quality control, *Photographic emulsions, *Photographic films, Coatings, Evaporation, *Selenium.

Schultes.
THE EFFICIENCIES OF THE UREA AND HEXAMETHYLENETETRAMINE ADDITION PRODUCTS OF OUR PHOTOGRAPHIC DEVELOPERS, PT. III. [1963] 3p.
Order from OTS or SLA $1.10 63-14296

Trans. from unidentified mono. pub. by Deutsche Gold- und Silberscheideanstalt, Constance (West Germany) n. d. (PB-74736)

DESCRIPTORS: *Photographic chemicals, Additives, *Urea, *Amines, Methyl radicals.

Selivanov, Yu. P. and Sinyakov, N. I.
OPTICAL DENSITY IN REPRODUCTION AS A FUNCTION OF THE SURFACE AREA OF SCREEN POINTS. [1962] 8p.
Order from ATS $12.75 ATS-14P66R

Trans. of Poligraf[icheskoe] Proizvod[stvo] (USSR) 1962, no. 9, p. 11-13.

DESCRIPTORS: *Photoengraving, *Photographic plates, Printing, Optical properties, Density.

Szekeres, Janos.
ELECTROPHOTOGRAPHIC TRANSVERSING COPYING APPARATUS. [1963] 7p.
Available on loan from SLA 63-16451

Trans. of German patent 1,139,741, appl. 29 May 58, issued 15 Nov 62.

DESCRIPTORS: *Electrophotography, *Recording devices, Design.

Vasil'ev, V. V.
THE EFFECT OF STIRRING ON THE PROPERTIES OF HIGHLY DISPERSED PHOTOGRAPHIC EMULSIONS. [1963] 3p.
Order from ATS $4.50 ATS-62Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 5, p. 381-383.

DESCRIPTORS: *Photographic emulsions, Photochemistry, Motion.

Plastics

MACHINES AND EQUIPMENT FOR JACKETING (SPRAYING) WIRES, WIRE STRANDS, CABLES AND ROPES WITH THERMO-PLASTIC SYNTHETICS AND SYNTHETIC RUBBER (Maschinen Drähten, Litzen, Kabeln und Seilen mit Thermoplastischen Kunststoffen und Kunstkautschuk). [1963] [23]p. (foreign text included).
Order from SLA $2.60 63-10999

Trans. of Draht (West Germany) 1962, v. 13, no. 9, p. 534-541.

DESCRIPTORS: *Plastic coatings, *Rubber coatings, Machines, *Wire, *Cordage, *Electric cables, Sprays, Spray nozzles, Synthetic rubber, *Thermoplastics.

NOVEL STABILIZER COMPOSITION FOR PVC RESINS. [1963] 11p. 3 refs.
Order from OTS or SLA $1.60 63-14354

Trans. of Belg[ian] pat[ent] 605,765 (U. S. priority 10 June 61 under ser. 109,016, by Hecker and Cohen to Argus Chem. Corp.).

DESCRIPTORS: *Polyvinyl chloride, Plastics, Stabilization, Colors, Vinyl plastics.

The invention relates to novel stabilizer compositions for PVC resins and to PVC resins having improved color, better stability at elevated temperatures and containing the above stabilizer compositions. (Author)

Aleksandrov, A. P.
THE CRYSTALLIZATION OF POLYMERS AND THE STRENGTH OF CRYSTALLIZING POLYMERS. 4 Apr 62, 3p. T.1383; [DSIR] NLL M.8851.
Order from OTS or SLA $1.10 62-32823

Trans. of mono. Trudy Konferentsii po Vysokomolekulyarnym Soedineniyam [Transactions of the Conference on High Molecular Compounds] (nos. 1-2) Akademiya Nauk SSSR [Otdeleniya Khim. i Fiziko-Matematicheskikh Nauk] 6-9 Sep 43 and 22-25 May 44 [pub. 1945] p. 7-9.

DESCRIPTORS: *Polymers, *Crystallization, Theory, Crystal growth, Stresses, Tensile properties.

Aleksandrov, [A] P.
THE RESISTANCE OF HIGH MOLECULAR COMPOUNDS TO LOW TEMPERATURES. 5 Apr 62, 10p. T.1386; [DSIR] NLL M.8848.
Order from OTS or SLA $1.10 62-32822

Trans. of mono. Trudy Konferentsii po Vysokomolekulyarnym Soedineniyam [Transactions of the Conference on High Molecular Compounds] (nos. 1-2) Akad[emiya] Nauk SSSR, [Otdeleniya Khim. i Fiziko-Matematicheskikh Nauk] 6-9 Sep 1943 and 22-25 May 1944 [pub. 1945] p. 49-59.

DESCRIPTORS: *Low temperature research, *Polymers, *Plastics, *Elastomers, Molecular structure, Molecular rotation, Deformation, Brittleness.

Andreas, F. and Keck, R.
ALIPHATIC SULPHONAMIDES AS RAW MATERIALS FOR EPOXY RESINS. May 63, 4000 words, 14 refs.
Order from TTIS $36.00 TTIS NS 81

Trans. of Plaste und Kautschuk (East Germany) 1963, v. 10 [no. 3] p. 140-145.

DESCRIPTORS: Aliphatic compounds, *Sulfonamides, *Epoxy resins, Chlorocarbons, Propanes, Methyl radicals, Plastic coatings, Casting, Laminated plastics.

Borodin, M. Ya., Kazakova, Z. I. and others.
FOAMED PLASTICS ON A BASE OF ORGANOSILICON RESINS AND THEIR COMBINATIONS WITH ORGANIC POLYMERS. 1 Mar 63 [6]p.
FTD-TT-62-1654.
Order from OTS $0.50 63-11624

Unedited rough draft trans. of mono. Khimiya i Prakticheskoe Primenenie Kremneorganicheskikh Soedinenii, Trudy Konferentsii [Chemistry and Practical Applications of Organosilicon Compounds, Proceedings of a Conference held in] Leningrad, 1958 [pub. Leningrad, 1961] v. 6, p. 304-306.

DESCRIPTORS: *Expanded plastics, *Silicon compounds, Organic compounds, Resins, Physical properties, *Silicones, Powder metals, *Aluminum.
A study is directed to the elucidation of the properties of organosilicon foamed plastics and to the evaluation of their possible uses.

Burk, Carl.
CENTRIFUGAL CASTING PROCESS FOR MANUFACTURING TUBES OF THERMOHARDENING EPOXY SYNTHETIC RESINS, tr. by J. B. 26 Oct 62, 6p. 3 refs.
Order from OTS or SLA $1.10 63-13007

Trans. of German Auslegeschrift (DAS) 1, 117, 298, cl. 39a, 19/04, internat'l cl. B29g, appl. 18 Jan 54, appl. announced and pub. 16 Nov 61.

DESCRIPTORS: *Plastics, *Epoxy resins, *Plastic pipes, Thermosetting plastics, *Casting, Manufacturing methods.

A centrifugal casting process for manufacturing tubes of thermohardening epoxy synthetic resins with additives effecting hardening is described. The component parts to be cast are introduced into the centrifugal casting mold in granular or powder form and are melted and hardened, therein. From the synthetic resin and the hardener, a melt is first of all produced in each case outside the centrifugal casting mold, and combined to a premelt, rapidly cooled and solidified, comminuted and introduced in such state into the casting mold. Ordinary additives are added to the melts produced for the premelt, for filling purposes.

Ebersbach, H. W. and Michl, K. H.
INHERENTLY PLASTICIZED POLYVINYL CHLORIDE (A CONTRIBUTION TO THE PROBLEM OF IMPACT STRENGTH IN PVC). [1963] 11p.
Order from SLA $1.60 63-14186

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 10, p. 513-516.

DESCRIPTORS: *Polyvinyl chloride, *Plasticizers, Mixtures, Polymerization, Mechanical properties.

Inherently plasticized PVC varieties have been developed by suspension polymerization of a monomer mixture, which combine excellent material properties with easy processability. This material comes in three different sorts. The properties, the possibilities of fabrication, and the uses up to now are discussed. (Author)

Fischer, H.
POLYTERAFLUOROETHYLENE. [Pt. 5 of Fluorochemistry]. 25 Mar 63 [28]p. 46 refs.
Order from SLA $2.60 63-14478

Trans. of Plaste und Kautschuk (East Germany) 1961, v. 8, no. 6, p. 304-310.
Another trans. is available from ATS $23.40 and as ATS-78P60G [1962] 17p.

DESCRIPTORS: *Fluorides, *Ethylenes, *Polymers, *Plastics, Resins.

A comprehensive survey is given on the preparation of the monomer and the polymer, on the chemical-physical properties of polytetrafluoroethylene, its fabrication and uses. PTFE dispersions and special fluorine plastics are also discussed. In addition, the experiences with the trial plant in Radebeul and with the products prepared there are given. (Author)

Frey, Hans-Helmut.
HOSTALIT Z, A NEW PLASTIC BASED ON PVC. [1963] 18p. (fig. omitted) 9 refs.
Order from SLA $1.60 63-14183

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 2, p. 50-55.

DESCRIPTORS: *Polyvinyl chloride, Polymerization, Mechanical properties, Plasticizers.

A new plastic-polyblend of PVC and chlorinated polyolefin is reported. According to procedure there is obtained hard, shock-resistant to soft, flexible product. The mechanical, thermic and electrical properties, their chemical and solvent resistance, and also the processing methods are described with special reference to the manifold possibilities of modification and fields of application. (Author)

Horun, S.
PROCESS FOR THE MANUFACTURE OF PHENOLIC FOAMS. [1963] 5p.
Order from ATS $7.50 ATS-53Q68RU

Trans. of Rev[ista de] Chim[ie] (Rumania) 1962, v. 13, no. 7/8, p. 471-473.

DESCRIPTORS: *Foams, Processing, Manufacturing methods, *Expanded plastics, *Phenolic plastics.

Inokuchi, T. and Matsumoto, M.
METHOD FOR THE MANUFACTURE OF SYNTHETIC HARD RESINS. [1963] 6p.
Order from ATS $10.50 ATS-13Q69J

Trans. of Japanese patent 14,246, applicant Matsushita Denko Co., Ltd., pub. 17 Sep 62, appl. filed 20 Feb 61, appl. no. 6245.

DESCRIPTORS: Manufacturing methods, *Plastics, Hardness.

Kakiuchi, H. and Sato, H.
METHOD FOR THE MANUFACTURE OF LOW-AROMATIC HYDROCARBON-FORMALDEHYDE RESINS. [1963] 3p.
Order from ATS $5.50 ATS-14Q69J

Trans. of Japanese patent 12,543, applicant Sumitomo Bakelite Co., Ltd., pub. 31 Aug [62] appl. filed 27 May 60, appl. no. 25,401, 1960.

DESCRIPTORS: *Hydrocarbons, *Formaldehyde, *Plastics

Kiselev, Boris Abramovich.
GLASS FIBER REINFORCED PLASTICS. 24 May 63, 337p. 93 refs. JPRS: 19389.
Order from OTS $5.00 63-21906

Trans. of mono. Stekloplastiki, Moscow, 1961, p. 1-240.

DESCRIPTORS: *Glass textiles, *Plastics, Laminated plastics, Filament-wound construction, Sandwich construction, *Binders, Acrylic resins, Epoxy plastics, Phenolic plastics, Silicon plastics, Material forming, Mechanical properties, Bonding, Stability, Industrial production, Fillers, Reinforcing materials.

Contents:
Fibrous glass fillers
Binders used in the glass plastic industry
Method of manufacturing glass plastics and glass plastic articles
Properties of fiberglass
Primary areas for use of glass fibre reinforced plastics.

Koch, H. and Sommer, Werner.
PVC PASTES AND "ANCHORING" OF SAME TO METAL SURFACES. [1963] 5p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-14174

Trans. of Kunststoffe (West Germany) 1957, v. 47, no. 4, p. 153-156.
Other translations are available from SLA $1.10 as 62-10561 [1961] 10p. and mi$1.80, ph$1.80 as 60-16837 [1960] [9]p.

DESCRIPTORS: *Polyvinyl chloride, Plastics, Adhesion, Surfaces, Particles, Viscosity, Plastic coatings, Iron, Aluminum.

For abstract see Technical Translations 7: 670, 1962.

Kozlov, P. V.
RELAXATION PROCESSES IN CELLULOSE ESTER FILMS. 4 Apr 62, 2p. T.1385; [DSIR] NLL M.8849.
Order from OTS or SLA $1.10 62-32821

Trans. of mono. Trudy Konferentsii po Vysokomolekulyarnym Soedineniyam [Transactions of the Conference on High Molecular Compounds] (nos. 1-2) Akad[emiya] Nauk SSSR [Otdeleniya Khim. i Fiziko-Matematicheskikh Nauk] 6-9 Sep 43 and 22-25 May 44 [pub. 1945] p. 12-14.

DESCRIPTORS: *Plastic films, *Cellulose esters, Deformation, Relaxation time, Molecular structure.

Krause, K. H.
USE OF TRIALKYL BORANES AND OXIDATION INTERMEDIATE PRODUCTS AS CATALYSTS FOR VINYL POLYMERIZATIONS. 12 Oct 60, 9p. 10 refs.
Order from SLA $1.10 63-10579

Trans. of Kunststoff-Rundschau (West Germany) 1959, v. 6, p. 139-141.

DESCRIPTORS: *Vinyl radicals, Polymerization, *Catalysts, *Boron compounds, Alkyl radicals, *Organoboranes, Oxidation, Plastics, *Vinyl plastics, *Acrylic resins, Synthesis.

Krongauz, E. S. and Suprun, A. P.
BRIEF SURVEY OF PUBLISHED WORK ON ISOTACTIC POLYMERS. [1963] 37p. 64 refs.
Order from OTS or SLA $3.60 63-14326

Trans. of Uspekhi Khimii (USSR) 1958, v. 27 [no. 9] p. 1056-1083.
Another trans. is available from ATS $29.75 as ATS-75L31R [1959] 31p.

DESCRIPTORS: *Polymers, *Stereochemistry, Bibliographies, *Ziegler catalysts, *Polyethylene plastics, Propenes, Butenes, Dienes, *Acetal plastics, *Styrene plastics, *Polyvinyl chloride, *Block polymers, *Elastomers, Polymerization, Reaction kinetics, Physical properties, Chemical properties.

Topics include: Production of stereoregular polymers; mechanism and kinetics of the stereospecific polymerization; the isotactic polypropylene; the block-polymers; the stereoisomeric polymers of diolefins; the polyvinylchloride (P. V. C.); the isotactic polystyrene; synthesis and properties of highly crystalline α-olefins with branched chain; polymerization of acetylene; and Copolymers of α-Olefins.

Leuchs, Ottmar.
THE PLASTICIZATION OF POLYVINYL CHLORIDE. [1963] 16p. (figs. omitted) 33 refs.
Order from SLA $1.60 63-14171

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 12, p. 547-554.

DESCRIPTORS: *Polyvinyl chloride, *Plasticizers, Molecular structure, Polymers, Binders, Electrical properties.

The molecule of a plasticizer contains polar and non-polar groups. The amount ratio of polar to non-polar groups is decisive for the compatibility of the plasticizer in PVC. The polar groups serve as binders. Non-polar molecule components can be divided into polarisable (aromatic) and non-polarisible (aliphatic), whereby two opposite types of plasticizer can be distinguished: One type is polar-aliphatic (for example trioctyl phosphate) it is difficult to mix in (poor compatibility) and lowers the solidification temperature of the mixture a great deal. The other type is polar-aromatic, incorporates well (good compatibility) and lowers the solidification point of the mixture less. The first type of plasticizer screens the polar groups of the PVC molecule and is called a "screening" plasticizer. The second type transmits the intermolecular forces somewhat like a hinge of several sections, and is called a "hinge" plasticizer. The most useful plasticizers represent generally an intermediate type between these two extremes. From these considerations are given new suggestions for the intimate plasticizing of polymers and for polymer plasticizers imparting cold-resistance. (Author)

Lindemann, Herbert.
PVC CELL MATERIAL BY THE HIGH-PRESSURE GAS PROCESS. [1963] 10p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-14180

Trans. of Kunststoffe (West Germany) 1958, v. 48, no. 5, p. 194-199.

DESCRIPTORS: *Polyvinyl chloride, Foams, Expanded plastics, Gases, Mixtures, Diffusion, Hydraulic presses, Plasticizers.

Because of its good qualities chemically and change-resistant, as well as its low combustibility, PVC foam is a material with great possibilities of development as a construction material for connections, both in its soft and its hard form. The method used thus far for producing foam has been based on the thermic decomposition with gas formation by the addition of leavening agents. For various reasons, this method has not proved fully satisfactory. On the other hand, the high-pressure gas process developed by the author presents a promising way of overcoming the defects inherent in the methods heretofore used, advancing PVC foams a significant step as to quality, and opening up to them new and expandable fields of use. The high-pressure gas process comprises the adsorptive gassing of PVC powders or pastes, to which have been added stabilizers and, if desired, coloring pigments. Preferably, gas mixtures are used which, upon their diffusion from the closed cells, ensure the space-stability of the foam object. (Author)

Natta, G. and Rigamonti, R.
ELECTRONIC RAY EXAMINATION OF SOME VINYL POLYMERS [Esame coi Raggi di Elettroni di Alcuni Polymeri Vinilica]. [1963] 8p. (figs. omitted) 6 refs.
Order from SLA $1.10 63-14122

Trans. of [Accademia Nazionale dei Lincei. Classe di Scienze Fisiche, Matematiche e Naturali]. Rendiconti (Italy) 1936 [ser. 6] v. 24, p. 381-388. Another trans. is available from SLA mi$1.80, ph$1.80 as 61-10453 [1960] [10]p.

DESCRIPTORS: *Vinyl radicals, Polymers, *Vinyl plastics, Molecular electronics, Electron beams.

An examination is made of the interferences produced in electron rays by thin laminae (thickness 10^{-5} cm) of some linear vinyl polymers: polyvinyl bromide, polyvinyl chloride, polyvinyl alcohol, polyvinyl acetate, polystyrole, and polydichloro-ethylene.

Parini, V. P. and Berlin, A. A.
METHOD OF OBTAINING A HEAT-RESISTANT PARAMAGNETIC POLYMER. 26 Feb 63 [4]p. FTD-TT-62-1882; AD-299 668.
Order from OTS $0.50 63-11623

Unedited rough draft trans. of Russian patent 148,517 (737748/23-4) 7 July 61.

DESCRIPTORS: *Heat resistant plastics, *Paramagnetic materials, Polymers, *Polyamide plastics, Synthesis, *Amines, *Quinones.

The method consists of subjecting aromatic diamine to reaction with quinone, free of labile hydrogen atoms adjacent to the keto group. The polymers obtained have increased heat resistance. Their specific electrical conductance at 25° is 10^{-9} to 10^{-7} ohm^{-1} with conductance energy of 0.25 to 0.3 ev.

Reich, R.
PROCESS FOR THE PRODUCTION OF PATTERNED WEBS OF CELLULAR PLASTIC MATERIAL, PREFERABLY CELLULAR POLYVINYL CHLORIDE. May 63, 800 words.
Order from TTIS $7.20 TTIS NS 75

Trans. of East German patent 23,856, appl. 24 Dec 59, pub. 1 Oct 62.

DESCRIPTORS: Synthesis, *Expanded plastics, *Polyvinyl chloride, Plastics.

Rysavy, D.
PRODUCTION OF PASTE-FORMING TYPES OF PVC IN ATOMIZING EQUIPMENT. [1963] 6p. (figs. omitted) 11 refs.
Order from SLA $1.10 63-14179

Trans. of Kunststoffe (West Germany) 1958, v. 48, no. 3, p. 108-110.

DESCRIPTORS: *Polyvinyl chloride, Production, Atomization, Industrial equipment, Colloids, Driers (Apparatus), Polymerization, Quality control.

A discussion of the method of preparing paste-forming PVC by drying of the latex won by emulsion polymerization in an atomizer dryer. Detailed consideration is given to the conditions of preparation which ensure a product of the desired qualities, and to the reasons which cause the variations in quality of these products.

Rysavy, D.
PROPERTIES OF THE PASTE-FORMING SORTS OF PVC. [1963] 10p. 19 refs.
Order from SLA $1.10 63-14178

Trans. of Kunststoffe (West Germany) 1957, v. 47, no. 12, p. 683-685.

DESCRIPTORS: *Polyvinyl chloride, Particles, Plasticizers, Colloids, Polymerization, Mechanical properties.

Resistance of various kinds of PVC to the dissolving effect of plasticizer was studied. From the measurements made it was found that the one decisive factor for the dissolving speed of PVC (when the K value lies in the range of from 65 to 80) is the amount of contact surface between PVC and plasticizer, which is determined by the physical structure of the PVC particles. The degree of polymerization has, within the range studied, only a minor importance. The different kinds of PVC are classified as to their suitability for the preparation of pastes; further, the effect of various drying temperatures on the properties of paste-forming PVC, prepared by drying PVC latex on the atomizing dryer (nubilosa type) is studied. (Author)

Scheurlen, H. A.
METHODS FOR THE PRODUCTION OF FOAM MATERIALS WITH SPECIAL CONSIDERATION OF LEAVENING AGENTS. [1963] 25p. (figs. omitted) 58 refs.
Order from SLA $2.60 63-14177

Trans. of reprint from Kunststoffe (West Germany) 1957, v. 47, no. 8, p. 446-455.

DESCRIPTORS: Production, *Foams, *Foam rubber, *Expanded plastics, Gases, *Plastics, Rubber.

The importance of leavening agents for the production of foam materials is briefly sketched by a survey of today's foaming methods. The need exists of being able to put in foaming agents which are as universal as possible, that is, usable through a wide temperature range and for the greatest possible number of plastics. Some methods, which make possible an extensive influencing of the qualities of a leavening agent, are here described. (Author)

Strubell, W.
METHACRYLATE POLYMERISATION WITH AUTOXIDISED STEARIC ACID IN THE PRESENCE OF COPPER PROPIONYLACETONE. May 63, 500 words, 5 refs.
Order from TTIS $4.00 TTIS NS 82

Trans. of Plaste und Kautschuk (East Germany) 1963, v. 10 [no. 3] p. 153.

DESCRIPTORS: *Acrylic resins, Methyl radicals, Polymerization, Oxidation, *Stearic acids, *Copper compounds, *Acetones, Catalysts, Plastics.

Überreiter, Kurt and Orthman, Hans-Joachim.
MEASURING MELTING POINT OR FLOW TEMPERATURE OF POLYMERS WITH A MELTING POINT AUTOGRAPH. [1963] 11p. (figs. tables omitted) 9 refs.
Order from SLA $1.60 63-14182

Trans. of Kunststoffe (West Germany) 1958, v. 48, no. 11, p. 525-530.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-20289 [1959] [16]p.

DESCRIPTORS: *Polymers, Phase studies, Melting, Temperature, Instrumentation, Measurement, Styrene plastics, Acrylic resins, Molecular weight, Naphthalenes, Plastics.

For abstract see Technical Translations 2: 859, 1962.

Wick, Georg and König, Helmut.
POLYVINYL CHLORIDE AGGLOMERATES. [1963] 5p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-14173

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 12, p. 583-587.

DESCRIPTORS: *Polyvinyl chloride, Plasticizers, Colloids, Mixtures, Processing.

Upon mixing PVC powder with more than 20% plasticizer, using emulsion, there results a paste, and using suspension PVC, there results a wet powder, both of which products must go through a gelling and granulating process to be ready for final use. A pourable powder mixture which saves material and cost and can be fed directly into the extrusion press, can be obtained in suitable mixtures, if in the mixing, the factors of pressure, temperature and time are properly selected. Rapid mixing apparatus, which can be heated or cooled, is recommended; in this kind of apparatus, friction and centrifugal force should be set up in the material being mixed. In this way a gelled, dry, granular and at the same time pourable agglomerate is obtained. (Author)

Wick, Georg and Weber, Gerhard.
A NEW PVC FOR PLASTISOLS: VESTOLITE SB 70. [1963] 7p. (figs. refs. omitted).
Order from SLA $1.10 63-14185

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 9, p. 455-458.

DESCRIPTORS: *Polyvinyl chloride, Colloids, Processing, Viscosity, Hardness, Tensile properties, Plastics.

Vestolite SB 70 is a new kind of PVC, ideally suited to pastes. In comparison with the ordinary kinds heretofore, it is distinguished by a smaller content in emulsifier, less water sensitivity and lower viscosity in paste. The properties of this material and its processing methods are discussed. (Author)

Yutkin, L. A. and Gol'tsova, L. I.
METHOD OF FORGING, EXTRUDING, BENDING AND OTHER DEFORMING OPERATIONS OF SHEETED PLASTIC MATERIALS. 12 Mar 63 [6]p.
FTD-TT-62-1755; AD-402 425.
Order from OTS or SLA $1.10 63-19426

Unedited rough draft trans. of Russian patent 147,162, 1962, appl. no. 622,741/25, 23 Mar 59.

DESCRIPTORS: *Plastics, Sheets, *Material forming, Forging, Extrusion, Deformation, *Electroforming, *Hydroforming (Mechanical), Explosive forming.

The invention relates to a method of forging, extruding, bending and execution of other operations connected with the deformation of sheeted plastic materials, distinguished by the fact, that the mentioned operations are realized under the effect of electro-hydraulic impacts (shocks) originating in an open or closed vessel, bottom, wall or lid of which is served by the machined materials. The electro-hydraulic impacts are realized either at discharges between the electrodes and the processed material or between two electrodes, one of which is made in form of a ring, or between electrodes with current conductive grid, situated near the surface of the processed material, or by thermal explosion of current conductive elements, situated for necessity near the surface of the processed material. (Author)

Rubber and Elastomers

Dogadkin, B. A., Tarasova, Z. N. and others.
EFFECT OF VULCANIZING STRUCTURE ON STABILITY OF THE VULCANIZATES. [1963] 13p. 18 refs.
Order from OTS or SLA $1.60 63-14316

Trans. of #Kolloidnyi Zhurnal (USSR) 1962, v. 24 [no. 2] p. 141-151.

DESCRIPTORS: *Vulcanizates, *Chemical bonds, Stability, Vulcanization, *Rubber, Elastomers, *Molecular structure, Mechanical properties, Physical properties.

The tensile strength of unfilled vulcanizates depends upon the type (energy), concentration and distribution of the vulcanization crosslinkages. An equation has been presented from which it follows that the maximum tensile strength at the vulcanization optimum is achieved at a definite ratio between the number of strong (C-C type) bonds and weak (molecular and salt type) bonds. Weak vulcanization bonds facilitate stress dissipation, the specimen being held intact by the strong bonds. It has been experimentally shown that the strength of carboxylate rubber vulcanizates is augmented by additional formation of carbon-carbon bonds under the influence of α-radiation. Similarly, the strength of sulfur vulcanizates containing polysulfide bonds increases under the action of low doses of α-rays. The dynamic strength depends upon the type of bonds and upon the conditions under which are carried out the repeated deformations. Under conditions of symmetrical alternating-sign twist with bending and of linear deformation at constant maximum stress and amplitude of deformation the dynamic (fatigue) strength increases with increase in energy of the cross-linkages. A linear dependence between the rate constants of creep and the number of deformations before the onset of rupture is observed for the various vulcanizates under the above conditions. (Author)

Meisenburg.
ANTI-AGING AGENTS AND VULCANIZATION ACCELERATORS WITH A CYANOGEN GROUP.
14 Oct 48 [2]p. 1 ref.
Order from OTS or SLA $1.10 63-14298

Trans. from mono. (report) of I. G. Farbenindustrie A. G., Leverkusen (PB-70310).

DESCRIPTORS: *Aging (Materials), *Vulcanization, *Cyanogen, Cyano radicals, Amines, Napthyl radicals, Benzyl radicals, Propyl radicals, Nitriles, Thiourea derivatives, Sulfides, Fatigue (Mechanics).

Pul, B. I. C. F. van.
THE EFFECT OF ANTIAGING COMPOUNDS AND ANTIOZONANTS ON THE OZONE RESISTANCE OF NATURAL RUBBER VULCANIZATES. Report from the Rubber Research Institute T. N. O., Delft, Netherlands. [1962] [7]p. 6 refs.
Order from SLA $1.10 63-10449

Trans. of mono. (paper) [presented at the] German Rubber Corporation Symposium, Hamburg, 7-9 June 56.

DESCRIPTORS: *Rubber, *Vulcanizates, Aging (Materials,), *Ozone, Inhibition.

The report is divided into the following parts: (1) Various testing methods; (2) Effect of some 30 antiaging compounds on the ozone resistance of natural rubber vulcanizates; (3) Effect of increasing the concentration of the antiaging compound on ozone resistance; (4) Correlation between the chemical structure of the antiozonants and the protective effects found.

Kohlmeyer, W.
THE VARNISHABILITY OF PAPER AND BOARD.
Mar 63, 3p.
Order from SLA $1.10 63-14498

Trans. of [die] Neue Verpackung (West Germany) 1958, v. 11, no. 5, p. 403-404.

DESCRIPTORS: *Paper, *Coatings, Varnishes, Physical properties.

Kubat, Jan and Sedivy, Milan.
THE EFFECT OF PULP YIELD ON SUITABILITY OF DIFFERENT RAW MATERIALS FOR MAKING LINER BOARDS FOR CORRUGATING MEDIUM.
[1962] [14]p.
Order from SLA $1.60 63-10075

Trans. of das Papier (West Germany) 1962, v. 16, no. 6, p. 236-243.

DESCRIPTORS: *Paper, *Fiberboard, Mechanical properties, Packing materials, Wood pulp, Industrial production.

Liiri, O. and Haavisto, S.
STUDY OF THE SIGNIFICANCE OF PREPRESSING IN THE MANUFACTURE OF PARTICLE BOARD.
[1963] 8p.
Order from ATS $10.75 ATS-45Q69FN

Trans. of Paperi ja Puu (Finland) 1962, v. 44, no. 9, p. 433-438.

DESCRIPTORS: *Fiberboard, Plywood, *Particles, Wood, Processing, Paper industry.

Martin, Gerard.
THE INFLUENCE OF THE RELATIVE HUMIDITY OF AIR ON THE PHYSICAL PROPERTIES OF PAPER (Influence de l'Humidite Relative de l'Air sur les Proprietes Physiques du Papier). [1963] [17]p. (foreign text included).
Order from SLA $1.60 63-10916

Trans. of [la] Papeterie (France) 1959, v. 81, no. 10, p. 705, 707, 709, 713, 715, 717.

DESCRIPTORS: *Paper, *Humidity, Air, Mechanical properties, Moisture, Water, *Absorption (Physical), Static electricity.

Munk, Edmund.
PRODUCTION OF MOLDED PARTICLE BOARD.
[1963] [8]p.
Order from SLA $1.10 63-10942

Trans. of a reprint from Holz-Zentralblatt (West Germany) 1958, no. 15/16, 6 Feb.

DESCRIPTORS: Particles, Molding, *Fiberboard, *Plywood, Production.

A discussion pointing out the possibilities and the progress made in the development of low and medium density molded particle board to which a veneer overlay or a film of synthetic resin is applied either as a part of the final pressing cycle or later.

Rackwitz, Gerhard and Obermaier, Martin.
CLASSIFICATION OF WOOD PARTICLES. I. BASIC PRINCIPLES OF PARTICLE SEPARATION AND SEPARATION IN AN HORIZONTAL AIRSTREAM.
[1963] [19]p. 16 refs.
Order from SLA $2.60 63-10946

Trans. of Holz als Roh- und Werkstoff (West Germany) 1962, v. 20, no. 1, p. 27-38.

DESCRIPTORS: *Particles, *Wood, Classification, Separation, Gas flow, *Fiberboard, Quality control.

The tasks of sifting comprise on wood particles, the mathematical bases of air sifting are derived and it is proved that this is the procedure suited best for the sifting of wood particles. The factor governing separation is the floating-velocity which depends on several influencing factors. The fluctuations of these factors, except for those of the air resistance, can be omitted. Therefore, tests have been carried out for which the technically significant procedure of sifting in a horizontal airflow was chosen. The separation of the particles according to their surface weight is quite well effected in accordance with theory. Shape and size are of minor importance. Frequency diagrams with a variation coefficient of some 30% are developing. By these scatterings the sifting becomes nonsharp. If sifting in a horizontal air-flow is used for wind-layered or throw-layered particleboards, these defects are rather rare. This is different if out of a mixture of chips those particles have to be separated which exceed a definite thickness.

Scheunert, Hans-Hermann and Eckert, Hans-Jurgen.
ON PRODUCTION OF SATURATING PAPERS FOR THERMOSETTING ADHESIVE FILMS (Über die Erzeugung von Imprägnierrohpapier für Thermohärtbare Leimfilme). Jan 63 [21]p. (foreign text included) 5 refs.
Order from SLA $2.60 63-10910

Trans. of Zellstoff und Papier (Germany) 1961, v. 10, no. 5, p. 174-181.

DESCRIPTORS: *Paper, Impregnation, Production, Pulp, Straw, Plastics, Thermosetting plastics, Adhesion.

Stoy, Wilhelm.
I-BEAMS WITH CORRUGATED WEB (A SUCCESSFUL EXPERIMENT IN THE MASS PRODUCTION OF LAMINATED WOODEN STRUCTURAL UNITS). [1963] 6p. (figs. omitted).
Order from SLA $1.10 63-10944

Trans. of Holz als Roh- und Werkstoff (West Germany) 1958, v. 16, no. 7, p. 274-276.

DESCRIPTORS: *Beams (Structural), *Wood, Laminates, *Panels (Structural), Production.

Takamuku, Setsuo and Yahama, Yoshikazu.
ON LIGNIN CARBOHYDRATE COMPLEX ISOLATED FROM IRRADIATED WOOD POWDER. May 62 [8]p. (figs. omitted) 11 refs. FPRB Trans. no. 155.
Order from NRCC NRCC C-4405

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1961, v. 64 [no. 9] p. 1662-1664.

DESCRIPTORS: *Lignin, Carbohydrates, *Radiation effects, Wood, Production, *Wood pulp.

Veith, H.
THERMAL STABILITY OF PAPER IN A VACUUM (Zur Thermischen Stabilitat von Papier im Vakuum). [1963] 10p. (figs. omitted) 13 refs.
Order from SLA $1.10 63-14412

Trans. of Kolloid-Zeitschrift (West Germany) 1957, v. 150, p. 14-19.

DESCRIPTORS: *Paper, Pyrolysis, Stability, Vacuum apparatus, Driers (Apparatus), Water vapor, Cellulose, Electric insulation.

Experimental investigations demonstrated that the decomposition reaction of paper in a vacuum is characterized by the formation of three gaseous decomposition products: water vapor, carbon dioxide and carbon monoxide. The decomposition reaction proceeds quite uniformly over a large temperature range (studies from 70°C to 250°C). The rate of the reaction increases exponentially with the negative reciprocal of absolute temperature. The logarithmic temperature increment of the decomposition reaction amounts to 2.6/10°C at the usual drying temperatures. The result of the volume fraction (number of moles) formed by decomposition amount to $H_2O:CO_2:CO$ = 54:29:17 approximately. At 130° C, which is the important temperature in the drying of technical paper, the absolute value of the rate of formation of water vapor due to thermal decomposition is 0.001% per hour. On the basis of a molecular weight of cellulose of 1 million, this means that after 10 drying hours at the temperature mentioned, 1/18 of the cellulose molecules exhibit a flow without the accelerating action of oxygen. These results apply to various technical drying applications. (Author)

Vollmer, Wilfried.
THE FLOW OF GASES AND VAPORS THROUGH PAPER (Der Transport von Gasen und Dämpfen in Papier). [1963] [19]p. (foreign text included) 11 refs.
Order from SLA $1.60 63-14976

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1954, v. 26, no. 2, p. 90-94.

DESCRIPTORS: *Paper, *Porosity, Gases, *Vapors, Diffusion, Measurement, *Gas flow, Foils, Permeability.

Zoch, H.
PAPER TECHNOLOGY PREREQUISITES FOR GOOD VARNISHING. Mar 63, 3p.
Order from SLA $1.10 63-14496

Trans. of Allgemeine Papier-Rundschau (West Germany) 1957, no. 4, p. 154-156.

DESCRIPTORS: *Paper, Printing, *Varnishes.

MATHEMATICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 193 (PHYSICS AND MATHEMATICS SERIES). 5 June 63, 10p. JPRS: 19575.
Order from OTS $0.50 63-21990

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *Applied mathematics, Electromagnetic fields, Neutrons, Chain reactions, Fluid flow, Partial differential equations, Computers, Integral equations, Control systems, Field theory, Electrons, Cobalt, *Czechoslovakia, *Poland, Natural radioactivity.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 64 (MATHEMATICS SERIES). 22 May 63, 5p. JPRS: 19327.
Order from OTS $0.50 63-21882

Trans. of selected abstracts from Referativnyi Zhurnal. Matematika (USSR) 1963, no. 1.

DESCRIPTORS: *Abstracts, *Mathematics, *China, Number theory, Projective geometry, Mathematical analysis, Functions, Real variables, Supersonic flow, Differential equations, Integral equations.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 70 (MATHEMATICS SERIES). 5 June 63, 10p. JPRS: 19582.
Order from OTS $0.50 63-21997

Trans. of selected abstracts from Referativnyi Zhurnal. Matematika (USSR) 1963, no. 2 and 10.

DESCRIPTORS: *Abstracts, *Mathematics, *China, Functional analysis, Laminar boundary layer, Numerical methods and procedures, Information theory, Partial differential equations, Probability, Integrals, Control systems, Synthesis.

CHINESE MATHEMATICS, 1963, VOL. 3, NO. 1, P. 1-[116]. Mar 63, 1v.
Order from the American Mathematical Society, Providence, R. I. $20.00/vol.

Trans. of [Shu Hsüeh Hsüeh Pao] (Chinese People's Republic) 1962, v. 12, no. 1.

DESCRIPTORS: *Mathematics, *China, Differential equations, Differential geometry, Fourier analysis, Groups (Mathematics), Nonlinear differential equations, Partial differential equations, Algebraic topology, Number theory, Functional analysis.

Contents:
A qualitative study of the integral curves of a differential equation, I, by Yeh-Yen-ch'ien and others
Fourier analysis on unitary groups. II. Cesaro summability of Fourier series, by Kung Sheng
The bound, stability and error estimates for the solution on nonlinear differential equations, by Li Yüeh-sheng
The Dirichlet problem for a class of equations of degenerating elliptic type, by Yang Kuang-chün
Imbedding theory and cohomology of permutation groups. I. General theory, by Yüeh Ching-chung
A qualitative study of the integral curves of a differential equation, II, by Yeh Yen-ch'ien
On the Cauchy problem for second order hyperbolic equations in two variables with initial data on the parabolic degenerating line, by Ch'i Min-yu
On the asymptotic stability in the weak sense of solutions of the Cauchy problem for systems of linear partial differential equations with constant coefficients, by Hou T'ien-shiang
On the representation of an even integer as the sum of a prime and an almost prime, by P'an Ch'eng-tung
On some properties of a class of functional spaces and their applications: note on paper, by Ting Hsia-hsi
Contributions to the theory of conjugate nets in projective hyperspace, IV: corrections, by Su Pu-ch'ing.

CHINESE MATHEMATICS, 1963, VOL. 3, NO. 2, P. 117-276. May 63, 1v.
Order from The American Mathematical Society, Providence, R. I. $20.00/vol.

Trans. of [Shu Hsüeh Hsüeh Pao] (Chinese People's Republic) 1962, v. 12, no. 2.

DESCRIPTORS: *Mathematics, *China, Algebraic topology, Groups (Mathematics), Partial differential equations, Functions, Nonlinear differential equations, Polynomials, Equations, Integral equations, Differential equations, Numerical analysis, Mechanics, Trigonometry, Operators (Mathematics), Inequalities.

Contents:
Some properties of the Riemannian spaces V_n which admit an n-tuply orthogonal system of hypersurfaces, by Pai Cheng-kuo
Imbedding classes and cohomology operations, by Yüeh Ching-chung
A problem of Lie groups, II, by Yen Chih-ta
Discontinuous initial value problems for systems of quasi-linear hyperbolic equations, III, by Ku Ch'ao-hao and others
On the multiple values of a meromorphic function and its derivative, by Hsiung Ch'ing-lai and Ho Yü-tan
The boundedness of solutions of certain nonlinear differential equations, by Liang Chung-ch'ao
On the divisor problem for $d_3(n)$ by Yüeh Ming-i and Wu Fang
The polynomial method in the approximate determination of the solution of the boundary value problem of linear integro-differential equations, by D. Mangeron and L. E. Krovocheine
The integral equation method in nonlinear mechanics, by D. Mangeron
On the best approximation of periodic differentiable functions by trigonometric polynomials, by Sun Yung-sheng
The characteristic classes of certain real quadrics, by Wu Wen-chüan and Li P'ei-hsin
On non-normal operators, by Hsia Tao-hsing
On a class of homogeneous complex manifolds, by Lu Ch'i-k'eng

Golovina, L. I. and Yaglom, I. M.
INDUCTION IN GEOMETRY, 2D ED [Induktsiya v Geometrii] tr. by A. W. Goodman and Olga A. Titelbaum. 1963, 106p.
Order from D. C. Heath and Company, Boston, Mass. $2.10

Trans. of [Populyarnye Lektsii po Matematike] (USSR) 1961 [v. 21, 2d ed., 98p].

DESCRIPTORS: *Geometry, Mathematical logic, Reasoning

Argunov, B. I. and Skornyakov, L. A.
CONFIGURATION THEOREMS [Konfiguratsionnye Teoremy] tr. by Edgar E. Enochs and Robert B. Brown. Topics in Mathematics. 1963, 41p.
Order from D. C. Heath and Company, Boston, Mass. $1.15

Trans. of [Popularyne Lektsii po Matematike (USSR) 1957 [v. 24].

DESCRIPTORS: Geometry, *Geometric forms, *Projective geometry, Algebra, Theory.

Golubkov, Yu. A. and Lebedev, A. B.
SOME METHODS FOR INCREASING THE RATE OF CALCULATION OF ELEMENTARY FUNCTIONS ON DIGITAL ELECTRONIC COMPUTERS. 22 Apr 63 [62]p. 7 refs. FTD-TT-62-1862.
Order from OTS or SLA $6.60 63-19473

Unedited rough draft trans. of mono. Nekotorye Puti Povysheniya Skorosti Vychisleniya Elementarnykh Funktsii na Tsifrovykh Elektronnykh Vychislitel'nykh Mashinakh, Moscow, 1962, 64p.

DESCRIPTORS: *Algorithms, *Functions, Numerical analysis, *Polynomials, Digital computers, Arithmetic operations.

Algorithms for table-polynomial approximation of elementary functions on digital computers are discussed. At the expense of a certain increase in the number of computer memory cells occupied with sub-routines for calculating elementary functions, these methods permit a significant increase in the rate of calculation of these functions. (Author)

Iliev, Lyubomir.
BIOGRAPHIC DATA ON ACADEMICIAN LYUBOMIR CHAKALOV (MATHEMATICS AND DATA PROCESSING). 21 May 63, 8p. JPRS: 19315.
Order from OTS $0.50 63-21874

Trans. of Bulgarska Akademiya na Naukite. Spisanie, 1962, v. 7, no. 4, p. 50-57.
An abstract trans. is available from OTS in 63-21898, JPRS-19358, 23 May 63, 10p.

DESCRIPTORS: *Biographies, *Mathematicians, Bulgaria.

Markushevich, A. I.
AREAS AND LOGARITHMS, tr. by Ronald S. Toczek and Reuben Sandler. 1963, 48p.
Order from D. C. Heath and Company, Boston, Mass. $1.45

Trans. of Russian mono. [Ploshchadi i Logarifmy] n.p., 1952.

DESCRIPTORS: Mathematics, *Geometry, Geometric forms, *Logarithms, Integrals, Functions.

Natanson, I. P.
SUMMATION OF INFINITELY SMALL QUANTITIES, 3D ED [Summirovanie Beskonechno Malykh Velichin] tr. by Stephen Whelan and Coley Mills, Jr. Topics in Mathematics. 1963, 59p.
Order from D. C. Heath and Company, Boston, Mass. $1.65

Trans. of [Populyarnye Lektsii po Matematike] (USSR) 1960 [v. 12, 3d. ed., 54p.].
Another trans. is available from GB $4.50, 1961, 66p.

DESCRIPTORS: *Series, *Integration, Algebra, Hydrostatic pressure, Hydraulic research, *Geometric forms, Volume, Parabolic bodies, Fourier analysis, Calculus

Pshenichnii, B. N.
IDEAS OF SOLUTIONS OF ALGEBRAIC EQUATIONS THROUGH DESIGNATED INTEGRALS. 22 Apr 63 [6]p. FTD-TT-63-232.
Order from OTS or SLA $1.10 63-19466

Unedited rough draft trans. of Zbirnyk Prats' z Obchyslyuval'noi Matematyky i Tekhniky (USSR) 1961, v. 3, p. 42-44.

DESCRIPTORS: *Algebra, *Equations, *Integrals, Sequences, Special functions, Functions, Monte Carlo method.

Given are formulas expressing a solution of any given algebraic equations in form of definite integrals. If these integrals are taken, the root can be found accurately. If they are not taken it is possible to find an approximated value of the root, calculating the obtained integrals by some approximation method, e.g. by the Monte-Carlo method. (Author)

Savinov, G. V. and Velershtein, R. A.
THE USE OF ELECTRONIC ANALOGUE COMPUTERS IN SOME EXTREMAL PROBLEMS. 17 May 63, 11p. 3 refs. JPRS: 19244.
Order from OTS $0.50 63-21841

Trans. of Moscow U. Vestnik. [Seriya 1: Matematika, Mekhanika] (USSR) 1962 [v. 17] no. 1, p. 60-67.

DESCRIPTORS: *Analog computers, Computers, *Applied mathematics, Calculus, Vector analysis, Algebra.

Sominskii, I. S.
THE METHOD OF MATHEMATICAL INDUCTION, tr. by Luise Lange and Edgar E. Enochs. 1963, 48p.
Order from D. C. Heath and Company, Boston, Mass. $1.45

Trans. of Russian mono. Metod Matematicheskoi Induktsii, 5th ed., n.p., 1959.

DESCRIPTORS: Mathematics, *Mathematical logic, Algebra, Geometry, Polynomials, Combinatorial analysis, Binomials, Trigonometry.

Tikhonov, A. N. and Samarskii, A. A.
CONVERGENCE OF DIFFERENCE SCHEMES IN THE CLASS OF DISCONTINUOUS COEFFICIENTS, tr. by Sergey Shewchuck. Aug 62, 7p. 4 refs.
Order from OTS or SLA $1.10 UCRL Trans-878(L)

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124 [no. 3] p. 529-532.

DESCRIPTORS: *Difference equations, *Differential equations, Sequences, Numbers, Numerical analysis, Operators (Mathematics).

Many difference schemes which are used for solving differential equations with variable coefficients and which converge to a class of smooth coefficients are divergent in the case of discontinous coefficients. The purpose of the article is to establish the required conditions of convergence of the difference schemes in the class of discontinuous coefficients for the equation

$$Lu=\frac{d}{dx}\left[\frac{1}{p(x)}\frac{du}{dx}\right]=-f(x)\ (0<x<1,\ 0<m\leqslant p(x)\leqslant M),$$

as well as to give a general characteristic of the class of normal schemes, which satisfy the required condition of convergence. (Author)

Venttsel', E. S.
AN INTRODUCTION TO THE THEORY OF GAMES [Elementy Teorii Igr] tr. by Jerome Kristian and Michael B. P. Slater. Topics in Mathematics. 1963, 66p.
Order from D. C. Heath and Company, Boston, Mass. $1.75

Trans. of [Populyarnye Lektsii po Matematike] (USSR) 1959 [v. 32, 66p.]

DESCRIPTORS: *Games theory

Vorob'ev, N. N.
THE FIBONACCI NUMBERS [Chisla Fibonachchi] tr. by Norman D. Whaland, Jr. and Olga A. Titelbaum. Topics in Mathematics. 1963, 47p.
Order from D. C. Heath and Company, Boston, Mass. $1.35

Trans. of [Populyarnye Lektsii po Matematike] (USSR) 1951 [v. 6, 46p.].
Another trans. is available from PP $1.75, 1961.

DESCRIPTORS: *Numbers, Number theory, Geometry

Zukhovitskii, S. I.
APPROXIMATION OF REAL FUNCTIONS IN P. L. CHEBYSHEV'S SENSE. [1963] [52]p. 24 refs.
Order from OTS or SLA $5.60 63-14489

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1956, v. 11, no. 2(68) p. 125-159.

DESCRIPTORS: *Functional analysis, *Polynomials, Convex sets, Equations, Mathematics, *Numerical analysis, Functions.

Computing Devices

TRANSACTIONS OF THE ALL-UNION CONFERENCE ON COMPUTER MATHEMATICS AND COMPUTER APPLICATION, 3-8 FEB 58: SELECTED ARTICLES. 23 Apr 63 [65]p. 3 refs. FTD-TT-62-1853.
Order from OTS or SLA $6.60 63-19493

Unedited rough draft trans. of mono. Trudy Vsesoyuznogo Soveshchaniya po Vychislitel'noi Matematike i Primeneniyu Sredstv Vychislitel'noi Tekhniki, Baku, 1961, p. 23-34, 71-93, 155-176.

DESCRIPTIVES: *Conferences, *Mathematics, Mathematical logic, Computers, Scheduling, *Algorithms, Programming (Computers), *Digital computers, Operation, Memory devices, Coding, *Arithmetic operations, Magnetic cores, Computer storage devices, *Computer systems components.

Contents:
Constructing algorithms for logical problems, by V. S. Korolyuk
A computer compiler, by T. M. Velikanova and others
Instruction system of a general-purpose digital computer using magnetic (ferrite) elements, and their execution pattern, by Yu. A. Makhmudov.

Vizun, Yu. I.
AN INSTRUMENT FOR THE INVESTIGATION OF THE PULSE PROPERTIES OF MAGNETIC CORES (STAND S-2). 22 Apr 63 [84]p. 6 refs. FTD-TT-62-1864.
Order from OTS or SLA $8.10 63-19467

Unedited rough draft trans. of mono. Pribov dlya Izucheniya Impul'snykh Svoistv Magnitnykh Serdechnikoe (Stend "S-2") Moscow, 1961, 82p.

DESCRIPTORS: *Magnetic cores, *Pulse analyzers, Hysteresis, Memory devices, *Computer storage devices.

The requirements on and approach to the design of an instrument for the investigation of the properties of small magnetic cores under pulse conditions are discussed. A detailed description of the experimental model of such an instrument and methods for operating with it are given. (Author)

MECHANICS

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 9, ABSTRACTS 9A2-9V573. [1962] [59]p.
Order from OTS or SLA $5.60 63-19121

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 9.

DESCRIPTORS: *Abstracts, *Mechanics, *Dynamics, Aeronautics, Hydrodynamics, *Hydraulic research, Thermodynamics, *Mechanical engineering, Scientific personnel, Meteorology, *Fluid flow, Materials, Mechanical properties, Structural properties, *Civil engineering, Marine engineering, Machines, *Aerodynamic characteristics, Plastics.

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 12, ABSTRACTS 12A23-12V716. [1962] [56]p.
Order from OTS or SLA $5.60 63-19122

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 12.

DESCRIPTORS: *Abstracts, *Mechanics, *Dynamics, Control systems, *Mechanical engineering, Machines, *Aeronautics, Hydrodynamics, *Hydraulic research, *Thermodynamics, Meteorology, *Fluid flow, *Civil engineering, Marine engineering, Materials, Mechanical properties, Structural properties, *Aerodynamic characteristics, Plastics.

Becker, R.
SHOCK WAVES AND DETONATIONS: APPLICATIONS [CONCERNING] DETONATIONS. [1963] [16]p. 4 refs.
Order from SLA $1.60 63-14902

Partial trans. (p. 348-362) of Zeitschrift für Physik (Germany) 1921, v. 8 [p. 321-362].
A complete trans. of article is available from SLA as AL-43.

DESCRIPTORS: *Shock waves, *Detonations, Combustion, Explosion effects, Numerical analysis, Detonation waves.

Becker, R.
SHOCK WAVES AND DETONATIONS: INTRODUCTION; THE GENERATION OF THE COMPRESSION WAVE; THE STATIONARY CONDENSATION IMPULSE. [1963] 41p. 36 refs.
Order from SLA $4.60 63-14901

Partial trans. (p. 321-347) of Zeitschrift für Physik (Germany) 1921, v. 8 [p. 321-362].
A complete trans. of article is available from SLA as AL-43.

DESCRIPTORS: *Shock waves, *Detonations, Compressible flow, Differential equations, Thermal conductivity, Structures, Numerical analysis, Detonation waves.

Bezhanov, K. A.
INTERACTION OF A SHOCKWAVE WITH A FREE LIQUID SURFACE (Vzaimodeistviye Udarnoi Volny so Svobodnoi Poverkhnost'yu Zhidkosti). [1962] 31p. 11 refs.
Order from OTS or SLA $3.60 63-10823

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1961, v. 1, no. 1, p. 129-143.

DESCRIPTORS: *Shock waves, Surface area, Liquids, Motion, Partial differential equations, *Functions, Mathematical analysis, Perturbation theory, Equations of motion, Transformations (Mathematics).

This paper considers the motion of a plane shockwave front of arbitrary intensity over a free liquid surface with a plane inclined lower boundary.

Eriksson, Siwert.
NOMOGRAM FOR CALCULATING ATTENUATION OF AIR SHOCK WAVES IN TUNNELS (Nomogram for Uppskattning av Luftstotvagors Tryckavtagande i Tunnlar). [1962] [17]p. 3 refs.
Order from OTS or SLA $1.60 AEC-tr-5025

Trans. of K. Fortifikatsionsforvaltningen, Forskningsektionen, Stockholm (Sweden). Rapport-103:24, Apr 61.

DESCRIPTORS: *Nomographs, *Attenuation, *Shock waves, Gas flow, Pipes, Underground structures, Charges (Explosive), Detonations.

Granstrom (Report No. 103.6 K FortF, 1950) has experimentally studied the propagation of air shock waves in tubes at the Royal Fortification Ministry, and has given a method for calculation of pressure in a tube if the shock wave's frontal pressure and impulse density are known at the instant of entry of the wave into the tube. This calculation method has been revised here into a compact nomogram form, and the result of tests with relatively small tube diameters has been extrapolated here to include areas of the order of magnitude of tunnels. Section 1 describes the method of constructing the nomogram, and Section 2 shows its use illustrated by some examples. Finally, Section 3 gives some ideas on the nomogram's range of validity and applicability. (Author)

Grubin, A. N.
PLANE TRANSVERSE BENDING OF A ROD CONSTANT CROSS-SECTION UNDER STEADY CREEP CONDITIONS (Ploskii Poperechnyi Izgib Sterzhnei Postoyannogo Secheniya v Usloviyakh Ustanovivsheisya Polzuchesti) tr. by Ronson. May 59 [18]p. (figs. formulae omitted) 7 refs. DSIR NLL M. 510.
Order from OTS or SLA $1.60 60-13626

Trans. of Kuybysh[evskii] Zhiv. In[stitu]t. Sbornik Nauchnykh Trudov (USSR) 1956, v. 6, no. 2, p. 3-22.

DESCRIPTORS: *Rods, *Deformation, Creep, *Cantilever beams, Stresses, *Loading (Mechanics).

Stepanenko, I. Z.
EXPANSION OF A CIRCULAR CYLINDRICAL TUBE SUBJECTED TO DYNAMIC LOADS, tr. by Sergey Shewchuck. Oct 62, 6p. 3 refs.
Order from OTS or SLA $1.10 UCRL-Trans-876(L)

Trans. of Prykladna Mekhanika (USSR) 1957, v. 3, p. 225-228.

DESCRIPTORS: *Cyclindrical bodies, *Plastic tubing, Load distribution, Mechanical properties.

Aerodynamics and Pneumatics

Bogacheva, A. A. and Galkin, V. S.
STRONG INTERACTION ON A PLATE WITH CONSIDERATION OF SLIP AND NEAR-WALL TEMPERATURE JUMP. 10 Apr 63 [15]p. 8 refs. FTD-TT-63-304.
Order from OTS or SLA $1.60 63-19533

Unedited rough draft trans. of Inzhenernyi Zhurnal (USSR) 1962, v. 2, no. 2, p. 231-238.

DESCRIPTORS: Superaerodynamics, Aerodynamic configurations, Flat plate models, *Laminar boundary layer, *Gas flow, Temperature, Hypersonic flow, Angle of attack, *Heat transfer.

A solution is given for the problem of the motion of a perfect gas in a laminar boundary layer on a semi-infinite flat plate at zero angle of attack, taking into account the slip and jump of gas temperature at the wall and the strong interaction between the boundary layer and a hypersonic inviscid flow.

Galkin, V. S.
TAKING INTO ACCOUNT THE MOLECULAR COMPOSITION OF AIR IN CALCULATION OF AERODYNAMIC FORCE COEFFICIENTS AND BODY TEMPERATURE IN FREE-MOLECULE FLOW AT HIGH SUPERSONIC VELOCITIES. 24 Apr 63 [6]p. 1 ref. FTD-TT-63-361.
Order from OTS or SLA $1.10 63-19663

Unedited rough draft trans. of Inzhenernyi Zhurnal (USSR) 1961, v. 1, no. 1, p. 175-176.

DESCRIPTORS: *Supersonic flow, Air, *Molecular properties, Aerodynamic configurations, Temperature, *Fluid dynamic properties, Drag, Lift, Gas flow, Statistical functions.

Kosterin, S. I., Yushchenkova, N. I. and others.
AN INVESTIGATION INTO THE EFFECT OF THE RAREFACTION OF A SUPERSONIC STREAM ON THE READINGS OF A TOTAL-HEAD PROBE. Apr 63, 5p. 9 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 12, p. 16ff.

DESCRIPTORS: Chemical engineering, *Pitot tubes, Measurement, Pressure, Mach number, Viscosity, Nozzles, Attentuation, *Supersonic flow.

Motulevich, V. P.
ON THE QUESTION OF HEAT AND MASS TRANSFER AT THE FORWARD POINT OF BLUNT BODIES IN THE PRESENCE OF HETEROGENEOUS CHEMICAL REACTIONS. 3 May 63 [17]p. 5 refs. FTD-TT-63-310.
Order from OTS or SLA $1.60 63-19662

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 11, p. 10-18.
Another trans. is available from ICE in v. 2, no. 2, $15.00/year.

DESCRIPTORS: *Blunt bodies, Gas flow, *Mass transfer, *Heat transfer, Chemical reactions, Combustion.

Considered is the heat and mass transfer of a blunt body in an incompressible fluid flow in the presence of heterogeneous reactions of the most general type occurring at finite rate. Analyzed are the questions of ignition and extinction, as well as the dependence of the intensity of mass removal and surface temperature on the various parameters characterizing the body, the flow, and the chemical reactions occurring. (Author)

Shakhnov, I. F.
USE OF THE SMALL PERTURBATIONS METHOD TO CALCULATE NONADIABATIC FLOW AROUND A FLAT PLATE USING A SUPERSONIC FLOW OF IDEAL GAS. 24 Apr 63 [10]p. 2 refs. FTD-TT-63-165.
Order from OTS or SLA $1.10 63-19532

Unedited rough draft trans. of [Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya]: Mekhanika i Mashinostroenie, 1961, no. 6, p. 37-41.

DESCRIPTORS: *Perturbation theory, Gas flow, *Supersonic flow, Heat transfer, Aerodynamic configurations, Flat plate models, Angle of attack.

Discussed is a nonadiabatic flow around a flat plate under zero angle of attack with a supersonic flow of an ideal, i.e. a nonviscous and non heat conductive, gas. The zone of heat delivery omega appears to be rectangular and adheres to the plate. In the report are given basic parameters, determining the flow in the very heating zone and outside of it. It is shown, that the presence of a rectangular zone of heat delivery for the adiabatic part of the flow (i.e. the part which does not pass through omega) is equivalent to the flow directed around a curvilinear surface, the equation of which is clearly representing by a function of heat delivery C, M number and dimension less length of zone 1 Behind the omega zone is formed a characteristic "thermal track" in which pressure and velocity are equal, and density is lower than its values at the output into omega zone. In the thermal trace exists a "nucleus" in which the density retains its constant value. Limits of applicability of linearized theory are indicated. (Author)

Stulov, V. P.
HEAT TRANSFER IN LAMINARY BOUNDARY LAYER ON A PLATE WITH CONSIDERATION OF CHEMICAL NONEQUILIBRIUM. 10 Apr 63 [9]p. 4 refs. FTD-TT-62-1752.
Order from OTS or SLA $1.10 63-19530

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 6, p. 11-14.

DESCRIPTORS: *Laminar boundary layer, *Heat transfer, Aerodynamic configurations, Flat plate models, Gas flow, Dissociation, Numerical analysis

Described are results of calculating the field of flow and heat transfer in a boundary layer on a flat plate by the method, described in an SSSR, Otd. Tek. Nauk. Izv: Mek. i Mash. 1961, no. 3 (Translation Available from OTS or SLA in 62-32941). Obtained were approximate formulas, representing the effect of variability of physical parameters on the magnitude of thermal flow on the wall. (Author)

Suksov, I. I.
DETERMINING FRICTION CHARACTERISTICS IN A TWO-DIMENSIONAL LAMINARY COMPRESSIBLE BOUNDARY LAYER AT HIGH TEMPERATURES AND ZERO PRESSURE GRADIENT. 8 Apr 63 [16]p. 7 refs. FTD-TT-63-90.
Order from OTS or SLA $1.60 63-19528

Unedited rough draft trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Aviatsionnaya Tekhnika (USSR) 1962 [v. 5] no. 1, p. 19-31.

DESCRIPTORS: *Laminar boundary layer, *Friction, Pressure, Temperature, Thermochemistry, Chemical equilibrium, Aerodynamic configurations, Flat plate models, Numerical analysis, Integrals, Real variables, Partial differential equations, Transformations (Mathematics).

In this report is given a simple final formula (containing a single integral) for the calculation of frequency characteristics. The formula was derived on the basis of an approximate solution of equations of a boundary layer and is suitable for engineering calculations and for evaluating the effect of determining parameters. A comparison shows that this formula is in good conformity with calculated data. (Author)

Yakovlevskii, O. V. and Abramovich, G. N.
AN HYPOTHESIS ON THE UNIVERSALITY OF EJECTION PROPERTIES OF TURBULENT GAS JETS AND ITS APPLICATION [AND] MIXING TURBULENT JETS OF DIFFERENT DENSITY. 28 Mar 63 [40]p. 20 refs. FTD-TT-63-222. AD-402 581
Order from OTS or SLA $3.60 63-19311

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 3, p. 40-57.

DESCRIPTORS: *Fluid flow, Gases, Jets, *Jets mixing flow, Ejection, *Turbulence, Theory, Fluid mechanics, *Gas flow.

Borshchevskii, Yu. T.
VELOCITY PULSATIONS IN TWO-PHASE STREAMS. Apr 63, 5p. 6 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of A[kademiya] N[auk] SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 9, p. 13ff.

DESCRIPTORS: Chemical engineering, Velocity, *Fluid flow, *Phase studies, Mass transfer, Turbulence, Diffusion.

Rotta, J.
EXPERIMENTAL CONTRIBUTION TO THE PERFORMANCE OF TURBULENT FLOW IN A TUBE. [1963] [49]p. 13 refs.
Order from SLA $4.60 63-14484

Trans. of Ingenieur-Archiv (West Germany) 1956, v. 24, no. 4, p. 258-281.

DESCRIPTORS: *Turbulence, *Pipes, *Fluid flow, Pressure, Velocity, *Reynolds number, Boundary layer transition, Test equipment, Tests.

Stklyanin, Yu. I.
MOTION OF A MIXTURE OF THREE LIQUIDS IN A POROUS MEDIUM. [1962] 14p. 11 refs.
Order from OTS or SLA $1.60 63-10215

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 5, p. 33-39.
Another trans. is available from ATS $15.45 as ATS-68N50R [1961] 8p.

DESCRIPTORS: *Fluid flow, Analysis, Fluids, Porous materials, Fluid mechanics.

Voronkova, L. D.
ELECTRICAL MODELING AND HYDRODYNAMIC ANALYSIS OF JOINT PRODUCTION BY LAYERS. [1962] 13p. 4 refs.
Order from OTS or SLA $1.60 63-10223

Trans. of Vsesoyuznyi Neftegazovyi Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1958, v. 12, p. 242-251.

DESCRIPTORS: *Oils, Deposits, Motion, Liquids, Porous materials, Partial differential equations, *Economic geology, Model tests, *Hydraulic research.

In the present work equations of continuity of liquid motion in communicating layers of uniform thickness and permeability, are derived; on the basis of this derivation, jointly producing layers can be modeled as a single summary or "equivalent" layer with appropriate hydrodynamic parameters.

POWDER METALLURGY, 1961 [VOL. 1] NO. 4: SELECTED ARTICLES. 5 Mar 63 [40]p. 14 refs. FTD-TT-62-1473; AD-299 652.
Order from OTS or SLA $3.60 63-19398

Unedited rough draft trans. of Poroshkovaya Metallurgiya (USSR) 1961 [v. 1] no. 4, p. 63, 86-102.

DESCRIPTORS: *Powder metallurgy, Powder metals, Powder alloys, Iron alloys, Brass, Impregnation, Mechanical properties, Cermets, Heat resistant materials, Fatigue (Mechanics), Thermal stresses, Sodium, Filters (Fluid), Purification.

Contents:
Investigation of the properties of powdered metal iron-brass compositions, by O. K. Teodorovich and I. D. Radomysel'skii
Investigation of the short-period strength of heat-resistant cermet materials, by V. N. Rudenko
On thermal fatigue of metal-ceramic materials, by G. N. Tret'yachenko and others
Purification of molten sodium by cermet filters, by I. M. Fedorchenko and others.

PROBLEMS IN PHYSICS OF METALS AND METAL STUDIES: SELECTED ARTICLES. 26 Mar 63 [16]p. 7 refs. FTD-TT-63-48; AD-402 431.
Order from OTS or SLA $1.60 63-19427

Unedited rough draft trans. of [Akademiya Nauk URSR, Kiev. Instytut Metallofizyky. Sbornik Nauchnykh Rabot] 1962, v. 14, p. 116-120, 147-151.

DESCRIPTORS: *Phase studies, *Steel, *Annealing, Electric currents, Heat, *Martensite, Grain structure (Metallurgy), Metallurgy.

Contents:
Effect of heating rate on the temperature intervals of conversions during electroannealing of steel, by V. N. Gridnev and Yu. Ya. Meshkov
On the existence of martensite crystal formation centers above the point of metastable equilibrium, by I. A. Arbuzova and L. G. Khandros

REMOVAL OF SEDIMENT FROM ELECTROLYTIC BATHS. [1962] 5p.
Order from SLA $1.10 62-20272

Trans. of [Ia] Métallurgie et [Ia] Construction Mécanique (France) 1943 [v. 75] Mar, p. 18 and Apr, p. 15-16.

DESCRIPTORS: *Electrolysis, *Impurities, Separation, Liquid filters, Electrolytes, Centrifuge separation, *Electroplating.

Agafonova, M. I., Baron, V. V., and Savitskii, E. M.
THE STRUCTURE AND PROPERTIES OF NIOBIUM-TIN ALLOYS. [1962] 7p. (figs. tables omitted).
Order from OTS or SLA $1.10 AEC-tr-5323

Trans. of [Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo] 1959, no. 5, p. 138-141.
Other translations are available from OTS or SLA $1.10 as 62-23130, MDF A-158 [1961] 7p. and $1.60 as 62-15709, FRI Trans-161 [1961] [12]p.

DESCRIPTORS: *Niobium alloys, *Tin alloys, Microstructure, Physical properties, Phase studies, X-ray diffraction analysis, Hardness, Superconductivity, Transition temperature, Thermodynamics.

For Abstract See Technical Translations 7:1054, 1962.

Bannykh, O. A.
SCIENTIFIC-TECHNICAL CONFERENCE ON HIGH-STRENGTH METALS, STEELS, AND ALLOYS.
4 Mar 63 [8]p. FTD-TT-62-1889. AD-400 544.
Order from OTS or SLA $1.10 63-19288

Unedited rough draft trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1962, no. 9, p. 62-63.

DESCRIPTORS: *Steel, *Metals, *Alloys, *Conferences, *Metallurgy.

Berhöft, E.
STRUCTURAL DESIGN AND CONTROLS FOR FORGING CRANES AND TURN-OVER GEARS.
May 63.
Order from BISI £7 5s BISI-3173

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 2] p. 81-92.

DESCRIPTORS: *Forging, *Hoists, *Gears, Design, Structural properties, *Control systems, Structural parts, Electrical equipment, Operation, Forge presses.

Blanter, M. E. and Novichkov, P. V.
KINETIC AND GEOMETRIC CHARACTERISTICS OF MARTENSITE CONVERSION IN AN IRON-NICKEL-MANGANIC ALLOY. 18 Feb 63 [14]p. 12 refs.
FTD-TT-62-1760. AD-400 501.
Order from OTS or SLA $1.60 63-19289

Unedited rough draft trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1961, no. 11, p. 12-19.

DESCRIPTORS: Dynamics, Geometric forms, *Martensite, Crystal growth, Crystal lattice defects, *Nucleation, Temperature, *Iron alloys, *Nickel alloys, *Manganese alloys.

Forster, H.
SOME MELTING RESULTS ACHIEVED BY THE DRESDEN ELECTRON BEAM MULTICHAMBER PROCESS. May 63.
Order from BISI £2 10s BISI-3193

Trans. of Freiberger Forshungshefte. [Reihe] B. [Hüttenwesenmetallurgie] (West Germany) 1962, v. 68, p. 19-26.

DESCRIPTORS: *Steel, *Titanium, *Smelting, *Electron beams

Jangg, G.
AMALGAMS IN POWDER METALLURGY. [1963] 8p.
Order from ATS $13.50 ATS-00Q69G

Trans. of Metall (West Germany) 1962, v. 16, no. 7, p. 639-642.

DESCRIPTORS: *Mercury alloys, *Powder metallurgy.

Michel, A.
CHANGES IN THE IRON AND STEEL INDUSTRY.
May 63.
Order from BISI £5 BISI-3153

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 1] p. 10-17.

DESCRIPTORS: *Iron industry, *Steel industry, Iron, Steel, Materials, *Economics, Fuels, Energy, *Foundries, Blast furnaces, Rolling mills.

Ostroumov, G. A.
THEORY OF MAGNETIC MIXING OF MELTS, by Z. Lerman. 1963, 44p. 9 refs. PL-480 Comm.
Order from OTS $0.50 63-11002

Trans. of mono. Fiziko-Matematicheskie Osnovy Magnitnogo Peremeshivaniya Rasplavov, Moscow, 1960 [63]p.

DESCRIPTORS: *Electroforming, *Liquid metals, Mixtures, *Hydrodynamics, Metallurgy, Theory, Electromagnetic waves, Propagation, Magnetohydrodynamics.

This book contains an electrodynamic part, where the propagation of a travelling wave in a half-space and in a finite conductor are discussed and the distribution of electrodynamic body forces is derived; a hydrodynamic part, dealing with the optimization of stator current frequency and reservoir size; and a metallurgical part, where conditions for uniform temperature and composition of the melt are examined, as well as means for accelerating the reaction between the melt and slag formed in mixing. The conclusion touches on some incompletely solved problems. (Author)

Pink, E., Krifka, O., and Schöberl, A.
TRANSFORMATION OF A 30-t OPEN HEARTH FURNACE FROM PRODUCER GAS TO NATURAL GAS/OIL FIRING. May 63, 13 refs.
Order from BISI £4 5s BISI-3129

Trans. of Radex Rundschau (Austria) 1961, no. 4, p. 647-656.

DESCRIPTORS: *Open hearth furnaces, Design, Fuel oil, Coal gas, Natural gas, Production, Construction

Serkovskii, V. A.
INFLUENCE OF VIBRATIONS OF METAL PROPERTIES.
Nov 59 [13]p. GKN Trans. 898; BISI Trans. 1415; [DSIR] NNL M. 4869.
Order from OTS or SLA $1.60 62-25331

Trans. of Liteinoe Proizvodstvo (USSR) 1958, no. 5, p. 19-21.

DESCRIPTORS: *Vibration, *Casting, *Metals, Solubility, Gases, Impurities, Density, Castings.

Ullmann, J.
ELECTRONIC DRIVE CONTROL IN METALLURGICAL WORKS, ILLUSTRATED ON A TUBE PUSH BENCH. May 63.
Order from BISI £ 3 5s BISI-3243

Trans. of Bänder, Bleche, Rohre (West Germany) 1963 [no. 1] p. 13-16.

DESCRIPTORS: *Electronic equipment, *Drives, *Control systems, Metallurgy, Velocity, *Electric motors.

Weihrich, O.
HOT DIP GALVANIZING AND PRETREATMENT OF MASS PRODUCED ARTICLES MANUFACTURED FROM PLAIN CARBON STEEL SHEET UP TO 1.2 MM THICK. May 63.
Order from BISI £5 BISI-3082

Trans. of Blech (West Germany) 1962, v. 9 [no. 5] p. 241-248.

DESCRIPTORS: *Hot working, *Tin plating, Production, Carbon alloys, *Steel, *Sheets, *Pickling, *Furnaces, Tanks (Containers).

Wesemann, F.
EFFECTS OF DEVELOPMENT OF PROCESSES ON THE FUTURE STRUCTURE OF HEAT AND POWER ECONOMY IN MIXED IRON AND STEELWORKS. May 63.
Order from BISI £7 BISI-3167

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 2] p. 65-75.

DESCRIPTORS: *Heat, *Power, *Economics, *Iron industry, *Steel industry, Fuels, Energy, Automation, Iron, Rolling mills, Industrial production.

Ferrous Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 118. 15 May 63, 51p. JPRS: 19196.
Order from OTS $1.50 63-21817

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1963 [v. 5] no. 2, p. 28-29; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 1, p. 65; Promyshlennoe Stroitel'stvo (USSR) 1963 [v. 41] no. 3, p. 5-10; Narodnoe Khozyaistvo Kazakhstana (USSR) 1963 [v. 21] no. 1, p. 32-33; and 8 selected articles from Feb-Mar 63 issues of 5 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, *Blast furnaces, Industrial plants, *Rolling mills, *Open hearth furnaces, Construction, *Excavators, Industrial equipment, Mechanical working, Material forming, Refractory materials, Metals, Machines, Automation.

Contents:
An automatic blast furnace, by Ya. Yashchin
The model VSM-2/550 continuous drawbench
Possibility of replacing three blast furnaces by two, by V. Pokryahkin
A new metallurgical complex at the Izhorskii plant, by A. Malagin
A new gigantic rolling mill
Open-hearth furnace problems at the Zhdanov plant, by M. Gonda and others
Rapid construction of a shop at the plant imeni Kuz'min, by G. L. Ratskevich
Excavators stand idle five years, by A. Shmelev
Poor quality of charging hoppers built by the Dneprovskii metallurgical equipment plant, by G. Lomonos
Construction of cold-rolling shop in the Cherepovets plant
Delay in production of refractories in the Ukraine
Concerning the reserves for the increase of labor productivity in ferrous metallurgy, by M. Luk'yanov
Kazakhstan leader in ferrous metallurgy, by V. Zhuravlev.

Bastien, Paul and Sulmont, Alain.
PHYSICO-CHEMICAL REACTIONS OCCURRING IN 18% CHROMIUM STEEL AND 2.4 OR 6% NICKEL STEEL. [1963] [25]p. 9 refs.
Order from SLA $2.60 63-14661

Trans. of Revue de Métallurgie (France) 1959, v. 56, no. 1 [Jan] p. 40-48.

DESCRIPTORS: *Steel, Nickel alloys, Chromium alloys, Chemical reactions, *Stainless steel, Strategic materials, Transformations, Microstructure.

Birman, R.
USE OF EXOTHERMIC MIXTURES AND HOT TOPS FOR HEATING INGOT FEEDER HEADS: SUMMARY. Jan 58 [4]p. GKN Trans-608; BISI Trans. 760; [DSIR] NLL M 3396.
Order from OTS or SLA $1.10 62-23879

Trans. of Stal' (USSR) 1957, v. 17, no. 8, p. 718.

DESCRIPTORS: *Castings, *Refractory materials, Aluminum, Oxidizers, Antioxidants, Processing, Steel.

Demaret, M.
SPECIAL BLOWING TECHNIQUES IN USE AT THE BASIC BESSEMER SHOP OF THE "ACIERIES ET MINIERES DE LA SAMBRE" WORKS AT MONCEAU-SUR-SAMBRE. [1961] [20]p. 13 refs.
Order from SLA $1.60 61-18399

Trans. of mono. [paper] from Journées Internationales de Sidérurgie [Liege, Luxembourg, Charleroi et Bruxelles, 18-28] June 58.

DESCRIPTORS: *Bessemer process, *Steel, *Oxygen, *Carbon dioxide, Steam, Economics, Nitrogen, Blowers.

Economopoulos, M. and Greday, T.
INFLUENCE OF THE MANGANESE CONTENT ON THE CONTINUOUS COOLING TRANSFORMATION DIAGRAM OF STRUCTURAL STEEL WITH 2% CARBON CONTENT. 28 Jan 63 [39]p. 15 refs.
Order from SLA $3.60 63-10940

Trans. of Revue Universelle des Mines (France) 1962 [v. 105] ser. 9, v. 18, no. 9, p. 559-577.

DESCRIPTORS: *Steel, *Manganese alloys, Carbon alloys, Castings, Cooling, Transformations, *Microstructure, Austenite, Bainite, Martenite, Mechanical properties.

Efroimovich, Yu. E.
SIMULATING AND CONTROLLING COMPUTERS FOR ARC STEELMAKING FURNACES [Modeliruyushchie i Reguliruyushchie Vychislitel'nye Ustroistva dlya Dugovykh Staleplavil'nykh Pechei] tr. by Miles de O. Tollemache. Feb 60 [15]p. [BISI] Trans. 1528; T[rans.] no. 5662; [DSIR] NLL M. 4903.
Order from OTS or SLA $1.60 62-25870

Trans. of Stal' (USSR) 1957 [v. 17, no. 7] p. 602-608. Other translations are available from MT, Jan 60 and OTS or SLA $1.60 as 62-14173 [1960] [14]p.

DESCRIPTORS: *Steel, *Electrical furnaces, *Computers, Control, Control simulators.

For abstract see Technical Translations 3: 608, 1960.

Granovskii, S. P. [Efanov, V. I., and Gromov, A.A.].
RUSSIAN METHOD FOR ROLLING BALL BEARINGS AND CRUSHER BALLS, tr. by R. Sewell. 29 Oct 57 [9]p. [BISI] Trans. 726; T[rans.] no. 4605; [DSIR] NLL M. 4177.
Order from OTS or SLA $1.10 62-13186

Trans. of Stal' (USSR) 1956 [v. 16, no. 4] p. 333-[337]. Another trans. is available from ASLIB as ASLIB-GB-70.

DESCRIPTORS: *Ball bearing, *Rolling mills, Ball mills, Hot-working, Production.

Guenot, M.
VARIOUS EXAMPLES OF APPLICATION OF STATISTICAL METHODS: ANALYSIS OF CARBON - EXPERIMENTS ON SHOCK RESISTANCE - COMPARISON OF METHODS OF STEEL MANUFACTURE. [1961] 9p.
Order from SLA $1.10 61-16287

Trans. of mono. [paper] from Journée de la Sidérurgie, Institut de Statisique de l'Universite de Paris, 22 June 54.

DESCRIPTORS: *Steel, *Carbon alloys, *Manganese alloys, Shock resistance, Castings, Quality control, Hydrogen, Production, Statistical analysis.

Heimerl, S.
EXPERIENCE WITH CELL-TYPE SOAKING PITS FOR SPECIAL STEEL. May 63.
Order from BISI £4 5s BISI-3128

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 18] p. 1232-1236.

DESCRIPTORS: *Steel, Temperature control, Design

Knüppel, H. and Öters, F.
ON THE KINETICS OF DEGASSING STEEL MELTS UNDER REDUCED PRESSURE. I. TRANSFER OF HYDROGEN AND NITROGEN BETWEEN THE GASEOUS AND LIQUID PHASES. II. THE CARBON MONOXIDE REACTION AND SIMULTANEOUS REMOVAL OF SEVERAL GASES. May 63, 14,500 words, 39 refs.
Order from BISI £9 10s BISI-3166

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 11] p. 729-743.

DESCRIPTORS: Dynamics, Gases, *Steel, Melting, Pressure, Material separation, *Mass transfer, *Hydrogen, *Nitrogen, Phase studies, Liquid metals, *Carbon compounds, *Monoxides, Absorption, Alloys.

Popova, N. M. and Sorokina, K. P.
DETERMINATION OF CUBIC CHROMIUM CARBIDE $Cr_{23}C_6$ IN STEEL. May 60 [6]p. 2 refs. GKN Trans. 998; BISI Trans. 1721; [DSIR] NLL M. 6347.
Order from OTS or SLA $1.10 62-25701

Trans. of Zavodskaya Laboratoriya (USSR) 1953 [v. 19] no. 9, p. 1033-1034.

DESCRIPTORS: Separation, *Chromium compounds, *Carbides, *Steel, Iron compounds, Tungsten compounds, Austenite, Chromium alloys, Nickel alloys, Manganese alloys, Radiography, X-ray photography, Quantitative analysis.

For abstract see Technical Translations 4: 58, 1960

Pouillard, E.
WELDING CHROME-MOLYBDENUM STEELS RESISTANT TO HEAT AND WITH HIGH COLD STRENGTH. July 62.
Order from BISI £3 10s BISI-2783

Trans. of Mét[aux] (Corros[ion]-Ind[ustries]) (France) 1959, v. 34 [no. 402] p. 48-71.

DESCRIPTORS: *Arc welding, *Steel, *Chromium alloys, *Molybdenum alloys, Electrodes, Coatings, Heat resistant metals and alloys, Mechanical properties, Microstructure

Raguin, J., Vintrou, L. and others.
RESULTS OF RECARBURIZATION OF STEEL IN THE OPEN HEARTH FURNACE BY POWDER INJECTION (INDUSTRIAL TRIALS AT SAINT ETIENNE) (With discussion). May 63, 8500 words, 16 refs.
Order from BISI £10 BISI-3187

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1962, v. 19, no. 12, p. 2677-2718.

DESCRIPTORS: *Steel, Processing, Carbon, Powders, *Open hearth furnaces, *Carbon alloys, Metallurgy, Economics

Rudnik, S.
A METHOD OF IDENTIFICATION OF NON-METALLIC INCLUSIONS IN CARBON STEELS. May 63.
Order from BISI £ 5 5s BISI-3099

Trans. of Hutnik (Poland) 1961, v. 28, no. 6, p. 229-233.

DESCRIPTORS: Identification, *Non-metals, Impurities, *Carbon alloys, *Steel, Silicates, Chemical analysis.

Sorokin, P. Ya.
THE BALANCE SHEET OF AN EXPERIMENTAL MELT IN AN OXYGEN BLOWN CONVERTER. Mar 60 [13]p. 9 refs. BISI Trans. 1649; [DSIR] NLL M. 4933.
Order from OTS or SLA $1.60 62-25878

Trans. of Stal' (USSR) 1958 [v. 18] no. 11, p. 987-992. Another trans. is available from OTS or SLA $1.60 as 62-14681 [1960] [12]p.

DESCRIPTORS: Experimental data, *Oxygen, Laboratory furnaces, *Metallurgical analysis, *Iron alloys, Chromium alloys, Carbon alloys, Manganese alloys, Silicon alloys, Slags, Waste gases, Melting, Steam, Carbon compounds, Dioxides, Heat transfer.

For abstract see Technical Translations 3: 604, 1960

Svechnikov, V. N. and Golubev, S. S.
SPEED OF DIFFUSION OF PHOSPHOROUS IN STEEL (K Voprosu o Skorosti Diffuzii Fosfora v Stali). Apr 63 [11]p. 5 refs. RTS-2179.
Order from OTS or SLA $1.60 63-19127

Trans. of Fizika Metallov i Metallovedenie (USSR) 1956, v. 2, no. 1, p. 88-92.

DESCRIPTORS: *Steel, *Phosphous, *Diffusion, *Microstructure, Castings, Crystalization, Carbon, Solubility, Annealing.

Tarnovskii, I. Ya., Pozdeev, A. A. and others.
DEPENDENCE OF DEFORMATION RESISTANCE ON THE VISCOUS PROPERTIES OF STEEL DURING HOT PRESSURE TREATMENT. 20 Jul 59, 11p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-4958

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 3, p. 82-90.

DESCRIPTORS: *Steel, Viscosity, Deformation, Resistance, Presses (Machinery), Heat treatment.

Wusterfeld, A. and Louwien, L.
BOUNDARY SURFACE PROCESSES IN THE TENSION-FREE COLD-SHAPING OF PHOSPHATED IRON AND STEEL. [1963] 8p. (figs. omitted).
Order from SLA $1.10 63-14196

Trans. of mono. Metalltechnik, n.p., 1942, p. 7-14.

DESCRIPTORS: *Iron, *Steel, *Phosphates, Cold working.

Topics include: Opinions up to now on the worth of the phosphate layer in shaping processes; studies on the workability of the phosphate layer; hardness of the phosphate layer; mechanical testing methods for phosphate layers; reaction of phosphate layer with caustic soda solution; and chemical exchange between phosphate layer and lubricants, particularly soaps.

Nonferrous (except light) Metals

Ageev, N. V., Tavadze, F. N., and Kartvelishvili, Yu. M.
PRODUCTION OF PURE CHROMIUM CHLORIDES [Uber die Herstellung von Reinen Chromchloriden]. [1963] 6p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.10 63-14149

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 130 [no. 6] p. 1294-1297.
Another trans. is available in German from T. I. B. $1.55, 6p.

DESCRIPTORS: *Chlorides, *Chromium compounds, Production.

The use of methods of halide refining has made it possible to produce the metal with a low content both in gaseous and in metallic admixtures. A proposed method consists of producing pure chromium chlorides from electrolytic chromium with a subsequent distillation of the chloride a stream of chlorine and its reduction by alkali or alkaline earth metals. (Author)

Kozlova, M. N., Lashko, N. F., and Sorokina, K. P.
PHASE ANALYSIS OF NONFERROUS ALLOYS. 23 Apr 63, 22p. 100 refs. JPRS: 18853.
Order from OTS $0.75 63-21650

Trans. of #Zavodskaya Laboratoriya (USSR) 1963, v. 29, no. 3, p. 261-271.

DESCRIPTORS: Alloys, *Phase studies, Analysis, *Nickel alloys, *Cobalt alloys, *Chromium alloys, *Copper alloys, *Titanium alloys, *Nickel alloys, *Zinc alloys, *Aluminum alloys, *Magnesium alloys, *Electrochemistry, Chemical precipitation, Separation.

Topics include a review of electrochemical phase analysis methods for nickel, cobalt, chromium, copper, titanium, niobium, zinc, aluminum, and magnesium based alloys; and a discussion of chemical methods for the separation of anodic precipitate phases.

Lott, Werner.
NEW APPROACHES TO ALUMINUM WIRE PRODUCTION. [1962] 22p. (figs. omitted) 2 refs.
Order from SLA $2.60 63-10294

Trans. of Neue Hütte (East Germany) 1960, v. 5, no. 5, p. 278-286.

DESCRIPTORS: *Aluminum, *Wire, Casting, Rolling mills, Labor, Economics.

Topics: Meeting requirements of traditional processes; new processes; description of equipment; properties of wire; economic considerations; and, man, the measure of progress. (Author)

Structural Metallurgy and Corrosion

Akolzin, P. A.
PREVENTION OF ACCUMULATION OF CORROSION PRODUCTS IN STEAM BOILERS (Predotvrashchenie Nakopleniya Produktov Korrozii v Parovykh Kotlakh) [1962] 13p. (foreign text included) 4 refs.
Order from OTS or SLA $1.60 63-15697

Trans. of Elektricheskie Stantsii (USSR) 1962 [v. 33] no. 3, p. 14-17.

DESCRIPTORS: *Corrosion, *Boilers, Steam, Feed water, Copper, Iron compounds, Oxides, Carbonic acids, Scale, *Corrosion inhibition, Coatings, Corrosion-resistant alloys, Water softeners, Water filters, Cellulose.

Akol'zin, P. A., Korolev, N. I. and others.
PREVENTION OF CORROSION OF CONDENSATE SYSTEMS WITH THE AID OF FILM-FORMING AMINES. [1962] 14p. (tables omitted) 8 refs.
Order from OTS or SLA $1.60 63-15140

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 3, p. 49-52.

DESCRIPTORS: *Corrosion inhibition, Coatings, *Amines, *Alkyl radicals, Metals, Pipes, Boilers.

Film-forming amines applied in small economical doses effectively avert corrosion in steam-condensate systems and on condensation surfaces. Decrease of corrosion in condensate systems reaches 92% to 98%. With this expensive equipment is preserved, the amount of corrosion products in the industrial condensate and their movement into the steam boiler is decreased. The dose of film-forming amines does not depend on the concentration of corrosion agents in the condensate (carbon dioxide and dissolved oxygen) since the amines do not enter into reaction with aggressive agents of the medium contacting the metal. These inhibitors of corrosion act only on the surface of the metal and that explains the small amounts that are required. It is necessary for each electrostation, when installing the method of averting corrosion with the help of film-forming amines, aside from observing the basic rules indicated above, to find experimentally the optimum amount of amine dosage and other conditions for economic and effective utilization of these inhibitors of corrosion of metals. (Author)

Erdmann-Josnitzer, F. and Bernhardt, W.
HOT SHORTNESS AND GRAIN BOUNDARY STRUCTURE IN STEEL. May 63.
Order from BISI £4 BISI-3189

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1958, v. 29 [no. 6] p. 353-357.

DESCRIPTORS: *Steel, Sulfur compounds, Grain structures (Metallurgy), X-ray spectroscopy, Metallography, Impurities, Microstructure

Kagan, D. Ya. and Kaganev, T. A.
ON PHOSPHATE CONTROL IN BOILER WATER (O Fosfatnom Rezhime Kotlovoi Vody). [1962] 16p. (foreign text included) 9 refs.
Order from OTS or SLA $1.60 63-15698

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 9, p. 56-62.

DESCRIPTORS: *Corrosion, Boiler, Steam, *Boiler tubes, *Feed water, Corrosion inhibition, Films, *Sodium compounds, *Phosphates, Hydrogen.

Krisch, A. and Schweitzer, R.
EFFECT OF THE TEST APPARATUS UPON THE STRAIN RATE DURING TENSILE TESTING. May 63.
Order from BISI £5 BISI-3211

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 5] p. 282-290.

DESCRIPTORS: *Test equipment, *Stresses, *Tensile properties, *Elasticity, *Deformation, Oils, *Steel.

Maldy, J. and Chaudron, G.
DIRECT EVIDENCE OF IMPURITY ENRICHMENT AT THE OXIDE INTERFACE OF INDUSTRIALLY PURE IRON. May 63.
Order from BISI £1 15s BISI-3105

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1962, v. 255, no. 8, p. 1269-1271 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Iron, Impurities, Microstructure, *Oxides, Metallography

Pepperhoff, W.
STRUCTURE-DEVELOPMENTS BY MEANS OF INTERFERENCE VAPOUR DEPOSITED FILMS. May 63.
Order from BISI £4 5s BISI-3111

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 4] p. 269-273.

DESCRIPTORS: Vapors, *Titanium compounds, *Dioxides, *Films, Surface properties, Grain structures (Metallurgy), Interference.

Schenck, H., Frohberg, M., and Gammel, T. el. EQUILIBRIUM IN THE REACTION OF SULPHUR BETWEEN MOLTEN CARBON-SATURATED IRON AND LIME-SILICA-ALUMINA-MAGNESIA SLAGS AT 1550°C. May 63.
Order from BISI £2 15s BISI-3145

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 9] p. 589-591.

DESCRIPTORS: *Slags, *Phase studies, *Iron alloys, Carbon alloys, *Sulfur compounds, Calcium compounds, Oxides, Silicon compounds, Dioxides, Aluminum compounds, Magnesium compounds, *Chemical equilibrium, Temperature, Mathematical analysis

Shakhkeldyan, A. B. and Ambrozhii, M. N. CORROSION OF A LEAD-SODIUM ALLOY. [1963] 18p. 7 refs.
Order from OTS or SLA $1.60 63-10979

Trans. of Saratov, U. Uchenye Zapiski (USSR) 1936, v. 14, no. 1, p. 73-82.

DESCRIPTORS: *Corrosion, *Lead alloys, *Sodium alloys, Electrolysis.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 46 (PHYSICS AND MATHEMATICS SERIES). 9 Jan 63 [8]p. JPRS: 17075.
Order from OTS or SLA $1.10 63-19543

Abstract trans. of Kernenergie (East Germany) 1962, v. 5, no. 10/11, p. 701-796.
A complete trans. of p. 701-734 is available from OTS $1.75 as 63-21225, JPRS-17876, 28 Feb 63 [63]p.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *East Germany, *Breeder reactors, *Nuclear radiation spectrometers, *Count-rate meters, *Preamplifiers, *Collimators, *Scintillation counters, Radioactivity, Atmosphere, Shielding, *Sodium.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 213 (PHYSICS AND MATHEMATICS SERIES). 18 June 63, 5p. JPRS: 19706.
Order from OTS $0.50 63-31051

Abstract trans. of Nukleonika (Poland) 1963, v. 8, no. 1, p. 1-39, 41-55, 57-67, 69-77, 79-83, 85-87.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, *Nucleonics, *Poland, Electrostatic accelerators, Radiation measurement systems, Electrolysis, Gamma-ray spectroscopy, Cesium, Radioactive isotopes, Determination, Neutron diffraction analysis, Silver, Solubility, Alloys, Laboratory equipment, Densimeters.

BULLETIN OF THE BORIS KIDRIC INSTITUTE OF NUCLEAR SCIENCES, 1962, VOL. 13, NO. 1. 1962, 88p. 69 refs. PL-480 AEC.
Order from OTS $1.00 AEC-tr-5031/1

Trans. of Institut za Nuklearne Nauke. Bilten (Yugoslavia) 1962, v. 13, no. 1, p. 1-88.

DESCRIPTORS: Periodicals, *Nuclear physics, *Radiochemistry, Uranium, Plutonium, Fission products, Butyl radicals, Phosphates, Phosphoric acids, Iodine, Arsenic, Tellurium, Separation, Heavy water, Chemical analysis, Purification, Paper chromatography, Radiation chemistry, Nuclear reactors, Dosimeters, Cobalt, Radioactive isotopes.

Contents:
Separation of uranium, plutonium and fission products on zirconium phosphate, by I. Gal and A. Ruvarac
Chemical and radiochemical analysis and purification of the heavy water taken from the RA reactor, by Z. B. Maksimovic and others
Separation of monobutyl-phosphate, dibutyl-phosphate and phosphoric acid, and their determination in a tributyl-phosphate-kerosene mixture by paper chromatography, by N. Cvjeticanin and J. Cvoric
Separation of idoine, arsenic (III) and tellurium (VI) by paper chromatography, by N. Cvjeticanin and V. Jovanovic
Radiation dosimetry of the RA reactor at Vinca, by O. Gal and others
The "2kC" ^{60}Co radiation unit of the Boris Kidric Institute at Vinca, by B. B. Radak and I. G. Draganic.

BULLETIN OF THE BORIS KIDRIC INSTITUTE OF NUCLEAR SCIENCES, 1962, VOL. 13, NO. 2. 1962, 83p. 73 refs. PL-480 AEC.
Order from OTS $1.00 AEC-tr-5031/2

Trans. of Institut za Nuklearne Nauke. Bilten (Yugoslavia) 1962, v. 13, no. 2, p. 1-83.

DESCRIPTORS: Periodicals, *Nuclear physics, *Radiochemistry, Nuclear reactions, Protons, Decay schemes, Uranium, Ionization, Temperature, Refrigerants, Lithium, Isotope separation, Ion exchange resins, Metals, Thiols, Chemical reactions, Catechuic acids, Complex compounds, Absorption spectra, Mass spectroscopy.

Contents:
Angular distribution of protons from the reaction N^{14} (d, p) N^{15}, by D. Stanojevic and M. Juric
Level scheme of ^{192}Os, by L. G. Marinkov and M. T. Zupancic
Effect of freon-12 on the thermal ionization of uranium on tungsten, by K. F. Zmbov
Separation of lithium isotopes on the Amberlite IR-120 cation exchanger, by M. M. Ciric and J. D. Pupezin

Reactions of some metal ions with 1-phenyl-tetrazol-5-thiol, by D. B. Stevancevic
Spectrophotometric studies of 2,5-dihydroxy-benzoic acid and its complex with uranium, by V. Antonijevic and M. Pravica
The isotopic analysis of lithium on a mass spectrometer, by J. Pupezin and others.

BULLETIN OF THE BORIS KIDRIC INSTITUTE OF NUCLEAR SCIENCES, 1962, VOL. 13, NO. 3. 1962, 55p. 65 refs. PL-480 AEC.
Order from OTS $1.00 AEC-tr-5031/3

Trans. of Institut za Naklearne Nauke. Bilten (Yugoslavia) 1962, v. 13, no. 3, p. 1-55.

DESCRIPTORS: Periodicals, *Nuclear physics, *Radiochemistry, Hafnium, Rhenium, Radioactive decay, Decay schemes, Isomeric transitions, Internal conversion, Multipolarity, Reactor fuel rods, Neutron transport theory, Neutron absorbers, Uranium compounds, Dioxides, Powders, Energy, Torque, Titanium, Vanadium, Complex compounds, Determination, Absorption spectra, Ribonucleic acids, Nucleotides, Ion exchange, Ion exchange resins.

Contents:
Investigation of 5.5 hours ^{180m}Hf isomeric state decay, by S. D. Kolcki and others
Multipolarities of the 72 keV and the 134 keV transitions in ^{187}Re, by S. Stepic and M. Mladjenovic
A method for determining the effectiveness of a group of symmetrically distributed absorber rods on the basis of the two-group diffusion theory, by R. Martinc
Balance of energy at high-temperature torsion of sintered UO_2, by B. Zivanovic and M. M. Ristic
The possibility of spectrophotometric determination of titanium and vanadium in the organic phase after extraction with amines, by M. V. Susic
Simple ion-exchange methods for the analysis of ribonucleic acids, by S. Petrovic and V. Jankovic.

BULLETIN OF THE BORIS KIDRIC INSTITUTE OF NUCLEAR SCIENCES, 1962, VOL. 13, NO. 4. 1963, 56p. 92 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-5031/4

Trans. of Institut za Nuklearne Nauke, Bilten (Yugoslavia) 1962, v. 13, no. 4, p. 1-53.

DESCRIPTORS: Periodicals, *Nuclear physics, *Radiochemistry, *Radiobiology, Phosphorus, Radioactive isotopes, Adsorption, Isotope separation, Oxalic acids, Tungsten, Polarographic analysis, Tracer studies, Rats, Spleen, Nucleic acids, Liver, Metabolism, Chicken, Embryos, Gamma rays, Radiation effects, Glycogen, Desoxyribonucleic acids, Enzymes, Bibliographies.

Contents:
Concentration of ^{32}P from irradiated $MgSO_4$ by adsorption on metal magnesium, by O. Z. Jovanovic-Kovacevic and others
The polarographic behaviour of tungsten in an oxalic acid solution, by M. Susic
The determination of quality in one-component two-phase mixtures by measuring the tracer concentration, by N. Kondic
The metabolism of liver and spleen nucleic acids of lethally irradiated rats treated with homologous deoxyribonucleic acid isolated from nonirradiated rats, by A. Becarevic and others
Effect of ^{60}Co gamma rays on the nucleic acids content and DN-ase II activity in the liver and spleen of chick embryo, by M. M. Jovanovic and others
Influence of a moderate dose of ^{60}Co gamma rays on the glycogene content in chick embryo liver, by M. M. Jovanovic and others
List of papers by the associates of the Boris Kidrich Institute of Nuclear Sciences published in 1962 and to be published in periodicals other than this bulletin
Record of international relations.

Bogatyrev, V. K.
AN APPROXIMATION FORMULA FOR CALCULATING THE GEOMETRICAL PARAMETER OF HOMOGENEOUS BODIES OF ARBITRARY SHAPE [AND] USE OF THE ALBEDO METHOD IN EXAMINING THE INTERACTION OF SUBCRITICAL SYSTEMS. 22 Jan 63 [14]p. 6 refs. FTD-TT-62-1639.
Order from OTS or SLA $1.60 63-19083

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1962, v. 13, no. 1, p. 68-72.

DESCRIPTORS: *Geometric forms, *Subcritical assemblies, *Albedo, Neutron flux, Nuclear physics, *Numerical analysis, *Geometry.

Glants, G., Dutsesku, N. and others.
INSTALLATIONS FOR STUDYING VARIATIONS IN THE ELECTRICAL PROPERTIES OF SEMICONDUCTORS IN A NUCLEAR RADIATION FIELD (Ustanovki dlya Izucheniya Izmenenii Elektricheskikh Svoistv Poluprovodnikov v Pole Yadernogo Izlucheniya). [1962] 14p.
Order from OTS or SLA $1.60 AEC-tr-5375

Trans. of mono. International Atomic Energy Agency Symposium on Radiation Damages in Solids and Reactor Materials, Venice, 7-11 May 62. [Proceedings] paper SM-25/10.

DESCRIPTORS: *Semiconductors, Electrical properties, Nuclear reactors, Fast neutron, Thermal neutrons, Shielding, Cryostats, Nitrogen, Liquefied gases.

Krevinskaya, M. E., Nikolskii, V. D. and others.
LES PROPRIETÉS DES SOLUTIONS NITRIQUES DU PLUTONYLE. PT. 1. HYDROLYSE DU NITRATE DE PLUTONYLE [Properties of Plutonyl Solutions in Nitric Acid. Pt. 1. Hydrolysis of Plutonyl Nitrate]. 28 Mar 63 [15]p. 7 refs. CEA Trans. no. R 1513.
Order from OTS or SLA $1.60 63-15489

Trans. in French of Radiokhimiya (USSR) 1959, v. 1, no. 5, p. 548-553.

DESCRIPTORS: *Nitric acid, Solutions, *Plutonium compounds, Nitrates, Hydrolysis, Chemical precipitation, Hydrogen ion concentration, Chemical equilibrium.

Molin, Yu. N., Chkheidze, I. I. and others.
INVESTIGATIONS BY THE EPR-METHOD OF THE TRANSFER ENERGY OF AROMATIC GROUPS DURING RADIOLYSIS OF SOME ORGANIC COMPOUNDS. [1963] 7p. 5 refs.
Order from OTS or SLA $1.10 63-14319

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, p. 192-196.

DESCRIPTORS: *Organic compounds, Benzenes, Energy conversion, *Radiation chemistry, *Paramagnetic resonance, Electrons, Decomposition, *Radiation effects.

The efficiency of energy transfer from saturated groups to aromatical was studied during radiolysis of frozen organic compounds of type AD, where A - aromatic "acceptor" of energy, D - radiative unstable substituent. For production of quantitative evaluations of the efficiency of energy transfer the EPR spectra and the radiative chemical yields of radicals were studied in compounds of the type AN, DN and AD. In DN type compounds the radiative-chemical yield of radicals $G_R = 4\text{-}5$ radicals/100 ev, while in aromatic compounds it is smaller by 1-2 orders. Radiation stability of aromatic compounds increases with increasing degree of conjugation. On the basis of difference in radiation stability of the substances of type AN and DN one can evaluate the probability of energy-transfer (G') from D to A in compounds of type AD. (Author)

Nesmeyanov, An. N., Priselkov, Yu. A., and Karelin, V. V.
VAPOR PRESSURE OF METALLIC YTTRIUM (Davlenie para Metallicheskogo Ittriya). [1962] 11p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5359

Trans. of mono. Symposium on the Thermodynamics of Nuclear Materials, Vienna, 21-25 May 62. [Proceedings] Paper SM-26/56.

DESCRIPTORS: *Yttrium, Vapor pressure, Rare earth elements, Thermodynamics, Radioactivity, Radiochemistry.

Schmeling, P.
EVALUATION OF GAS RELEASE CURVES ATTAINED DURING PAD EXPERIMENTS. I. MULTI-TEMPERATURE ANNEALS WITH $F < 0.2$. [Special Technical rept. on Research into the Diffusion of Inert Gases in Solid Bodies] 11 Nov 61-12 Mar 62, on Contract 064-61-8-RDD. [1962] 15p. 2 refs.
HMI EU-B-13.
Order from OTS or SLA $1.60 EURAEC-359

Trans. of a rept. from Hahn-Meitner-Institut für Kernforschung, Berlin (West Germany) n.d.

DESCRIPTORS: *Fission products, Gases, *Helium group gases, Diffusion, Graphic analysis, *Reactor fuels, Annealing.

When measuring the accumulated release of fission gases during a PAD experiment, the temperature is often successively increased and an initial burst of release is observed. The method used for the evaluation of such release curves is by no means unimportant, and this report serves the pedagogic purpose of demonstrating this importance. A fictitious case is presented and various methods of evaluation are used. It is shown that the only reliable method is to plot the release, F, as a function of the square root of time, whereby the initial burst may be determined and subtracted the primary data. The following treatment is dependent upon the existence of more bursts. By false plotting the initial burst may cause the interpretation that each temperature increase induces a new burst, which needs not to be the case. (Author)

Shiryaeva, L. V. and Tolmachev, Yu. M.
THE CHEMICAL BEHAVIOUR OF ^{99}Mo FORMED DURING THE IRRADIATION OF URANIUM OXIDES WITH SLOW NEUTRONS. [1961] 7p. 15 refs.
NP-tr-455.
Order from OTS or SLA $1.10 61-23152

Trans. of #Atomnaya Energiya (USSR) 1959, v. 6, no. 5, p. 528-532.

DESCRIPTORS: *Molybdenum, Isotope separation, Radiation effects, *Uranium compounds, *Oxides, *Separation, *Thermal neutrons, Annealing, Temperature, Vacuum apparatus, Argon, Hydrogen, Oxygen.

This paper considers the problem of extracting ^{99}Mo from irradiated U_3O_8 and UO_2 specimens annealed in a vacuum or in a stream of argon at 400 to 1200°C. Relationships are shown to exist between the percentage extraction of ^{99}Mo and the annealing temperature and time. From the relationships obtained between the logarithm of the extraction of ^{99}Mo and the reciprocal of the absolute temperature, the activation energy for the removal of ^{99}Mo from the uranium oxide grains was calculated for certain parts of the temperature range. (Author)

Starik, I. E., Sheidina, L. D., and Il'menkova, L. I.
ETAT DES MICROQUANTITÉS DE RADIOÉLÉMENTS SE TROUVANT DANS DES SOLUTIONS DILUÉES. VII. ETUDE DE L'ÉTAT DU PROTACTINIUM DANS LES SOLUTIONS AQUEUSES, PAR LA MÉTHODE D'ADSORPTION ET DE DÉSORPTION (Sostoyanie Mikrokolichestv Radioelementov v Razbavlennykh Rastvorakh. VII. Izuchenie Sostoyaniya Protaktiniya v Vodnykh Rastvorakh Metodom Adsorbtsii i Desorbtsii) [State of Microquantities of Radioelements in Dilute Solutions. Pt. 7. Investigation of the State of Protactinium in Aqueous Solutions by means of Adsorption and Desorption]. 24 Mar 62 [9]p. (foreign text included) 6 refs. CEA Trans. no. R 1535.
Order from OTS or SLA $1.10 63-15484

Trans. in French of Radiokhimiya (USSR) 1959 [v. 1] no. 2, p. 168-170.

DESCRIPTORS: *Radioactive isotopes, Solutions, *Protactinium, Adsorption, Separation, Adsorbants, Quartz, Nitric acid, Hydrochloric acid, Ions, Colloids, Protactinium compounds, Hydroxides, *Radiochemistry.

Tarrago, Xavier.
CHEMICAL EFFECTS OF GAMMA RAYS ON AQUEOUS SOLUTIONS OF SEVERAL COMPOUNDS OF NITROGEN (Effets Chimiques des Rayons γ sur les Solutions Aqueses de Quelques Composes de l'Azote). [1962] 55p. 54 refs.
Order from OTS or SLA $5.60 AEC-tr-4564

Trans. of Annales de Chimie (France) 1960 [ser. 13] v. 5, p. 5-64.

DESCRIPTORS: *Nitrogen compounds, Solutions, *Gamma rays, Chemical reactions, Water, *Radiochemistry, Nuclear physics laboratories.

Instruments and Installations

Ablyaev, Sh. A., Generalov, V. V., and Starodubtsev, S. V.
MEASUREMENT OF GAMMA RADIATION DOSE FROM OPTICAL ACTIVITY VARIATION OF CARBOHYDRATES. 29 Mar 63 [10]p. 11 refs. FTD-TT-63-317. AD-402 453.
Order from OTS or SLA $1.10 63-19518

Unedited rough draft trans. of mono. Tashkentskaya Konferentsiya po Mirnomu Ispol'zovaniyu Atomnoi Energii. Trudy, v. 1, 1961, p. 159-163.

DESCRIPTORS: Measurement, *Gamma rays, Gamma counters, *Radiological dosage, *Optical analysis, *Carbohydrates.

Heil, Hans.
A NEW ION SOURCE. [1963] 23p. 15 refs.
Order from SLA $2.60 63-14659

Trans. of Z[eitschrift für] Physik (Germany) 1943, v. 120, p. 212-227.
Another trans. is available from SLA as 1-938, 20p.

DESCRIPTORS: *Ion sources, Design, *Molecular beams, *Electron bombardment, Magnetic fields, Electrons, Voltage, Velocity, Measurement, Mercury, Hydrogen, Ions, Protons, Production.

A new ion source is described where the ions are produced by bombarding a molecular beam or a stream of gas at low pressure with electrons. It is desired to produce ionizing collisions of the greatest possible number of electrons. For this purpose, each electron is propelled many times back and forth through the molecular beam, and a magnetic field is used along the electron paths to contain the electrons. In this way, a high electron density can be maintained in an almost field-free space without a flow of large currents toward the anode. Considerations of suitable dimensioning and arrangement of the electrons are presented, and the structure and preparation of the tubes used for the measurements are described in detail. Measurements with mercury ions and hydrogen ions yield currents of 1-2 mA with beam cross-sections of less than 1 sq. cm. The electron currents required for this are 1-5 mA. The electron efficiency is up to 80%. Oscillograms of the two currents are plotted against the electron voltage with different magnetic fields to study the effect of the magnetic field strength and of the electron velocity. (Author)

Nuclear Engineering and Power

Billiau, R., Jonckheere, E. and others.
USE OF PLUTONIUM AS FUEL IN NUCLEAR REACTORS [AND] RESEARCH ON COVERING URANIUM-CONTENT CERAMIC PARTICLES BY MEANS OF METALLIC NIOBIUM. Quarterly rept. no. 6, 1 Oct-31 Dec 61 and appendix (summary of quarterly repts. 1-2, for period 15 July-31 Dec [60]) on Contract 027-60-7 RDB. [1962] 58p.
Order from OTS or SLA $5.60 EURAEC-227

Trans. of a rept. (including appendix) from Société Belge pour l'Industrie Nucléaire, Brussels, Jan 62.

DESCRIPTORS: *Nuclear reactors, *Reactor fuels, *Plutonium, *Ceramic materials, Particles, *Niobium, *Metal coatings, Chemical analysis, *Uranium, Plutonium compounds, Oxides, Reactor fuel processing, Physical properties, Mechanical properties.

PLUTONIUM RECYCLING. Quarterly rept. 5, 1 Apr-30 June 62, on Contract 037-60-12 RDF. [1963] 12p. 3 refs.
Order from OTS or SLA $1.60 EURAEC-429

Trans. of a rept. from Commissariat à l'Énergie Atomique, Paris (France) n.d.

DESCRIPTORS: *Plutonium, *Reactor fuel elements, *Reactor fuel processing, Reactor fuels.

Topics include: Study of ceramic fuels with a plutonium oxide base (PuO_2 dispersion in inert oxides, and particularly in Al_2O_3 and MgO, study of certain physical properties of UO_2PuO_2 erection of an apparatus for the measurement of electrical resistivity, thermoelectric power and Hall effect of UO_2-PuO_2 samples between the ambient and 600°C temperatures.); irradiation of plutonium-base fuel elements in the EL 3 pile; and, Fabrication of plutonium-base fuel elements.

TECHNICAL REPORT, PT. A. CAN-1 Quarterly Progress Rept. 1 for the Period 1 Nov 59-31 Jan 60. [1962] 41p. CISE R-18; supersedes TID-12454.
Order from OTS or SLA $4.60 EURAEC-36

Trans. of a rept. from Centro Informazioni Studi Esperienze, Milan (Italy) 15 Feb 60.

DESCRIPTORS: *Nuclear reactors, *Light water reactors, *Power reactors, *Reactor coolants, *Steam, Aerosols, *Heat transfer, *Heat exchangers, Reactor system components, Corrosion, Control systems, Pressure, Reports.

Research on steam-water mixtures as coolants for light water moderated power reactors was reviewed. Specific topics included heat transfer, loop design, flow stability and distribution, and corrosion and erosion.

TECHNICAL REPORT, PT. A. CAN-1 Quarterly Progress Rept. no. 5 for the Period 1 Nov-31 Dec 60. [1962] 12p. CISE R-32; supersedes TID-12458.
Order from OTS or SLA $1.60 EURAEC-40

Trans. of a rept. from Centro Informazioni Studi Esperienze, Milan (Italy) 1 Feb 61.

DESCRIPTORS: Reports, *Scientific research, *Heat transfer, *Fluid flow, Stability, *Corrosion research, *Erosion, Measurement, *Nuclear engineering, Tests.

The assembling of the third annular test element designed to permit bilateral heating was completed. To permit further cross checking with the results obtained with the previous annular elements the tests were resumed by applying external heating only on the third element. The experimental facility was then modified to allow for bilateral heating. Due to some difficulties with the internal voltage tap the experiments with bilateral heating were begun by reading burnouts on the external tube keeping the power on the internal tube constant. (Author)

USE OF PLUTONIUM AS FUEL IN NUCLEAR REACTORS (IRRADIATION). Quarterly rept. 1 (Irradiation) for 1 Dec-31 Dec 61, on Contract 078-61-12 RDB. [1962] 20p.
Order from OTS or SLA $1.60 EURAEC-237

Trans. of a rept. from Société Belge pour l'Industrie Nucléaire, Brussels, Jan 62.

DESCRIPTORS: *Plutonium, *Reactor fuels, *Fuel elements, *Nuclear reactors, Ceramic materials, Sintering, Pipes, Reactor fuel processing, Thermodynamics, Laboratory equipment, Tests.

This report describes the principle of the techniques and characteristics of different apparatus. The study and perfecting of which have been the object of research during the decade mentioned. Topics include: (1) Study and perfecting of an apparatus for the out-of-pile thermal simulation of ceramic fuel units in operation. (2) Study of quality check techniques to be carried out on empty tubes and finished fuel units. (3) Study of an apparatus for puncture tests on irradiated fuel units.

Nuclear Reactions

Artsimovich, L. A.
PROBLEM OF CONTROLLED THERMONUCLEAR SYNTHESIS. 1 Mar 63 [19]p. FTD-TT-62-1788; AD-299 853.
Order from OTS or SLA $1.60 63-19503

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 1, p. 7-15.

DESCRIPTORS: *Thermonuclear experiments, *Thermonuclear reactions, Nuclear reactions, Plasma physics, Magnethohydrodynamics, Magnetic fields, *Reviews.

A state-of-the-art review.

Takibayev, Zh. S.
A MAGNETIC TRAP FOR COLLIDING BEAMS. 7 Mar 63 [15]p. 13 refs. FTD-TT-62-1901; AD-299 620.
Order from OTS or SLA $1.60 63-19510

Unedited rough draft trans. of Akademiya Nauk Kazakhskoi SSR, Alma Ata. Institut Yadernoi Fiziki. Trudy, 1962, v. 5, p. 147-154.

DESCRIPTORS: Particle beams, *Deuteron beams, *Triton beams, Charged particles, *Plasma physics, Magnetic fields, *Nuclear reactions, Equations of motion, Particle trajectories, Thermonuclear experiments, Thermonuclear reactions.

The question of using oppositely moving beams of deuterons and tritons for obtaining sufficiently intense nuclear synthesis reactions is considered. The possibility of confining such beams with the aid of a magnetic field of particular configuration is discussed. (Author)

PHYSICS

THESES OF THE SOVIET GRAVITATION CONFERENCE (NO. 1) MOSCOW, SUMMER 1961, tr. and reviewed by Maurice A. Garbell. 1963, 130p. Garbell Aerospace Series no. 9.
Order from Garbell Research Foundation, 1714 Lake Street, San Francisco, 21, Calif. $7.50

Trans. of mono. Soviet Gravitation Conference (no. 1) Moscow, 1961. Theses

DESCRIPTORS: Theses, *Gravity, *Conferences, Relativity theory, Quantum mechanics, Field theory.

Kirschstein, Gernhard and Koppelmann, Floris.
THE ELECTRIC ARC IN HIGH VELOCITY GAS: TECHNICAL PAPERS. 10 Oct 61 [98]p. 33 refs. MCL-1344; AD-266 476.
Order from OTS or SLA $8.60 62-33355

Unedited rough draft trans. of mono. Der Elektrische Lichtbogen in Schnellstroemendem Gas, n.p., 1937, v. 16, pt. 1, p. 51-71 and pt. 3, p. 26-55.

DESCRIPTORS: Gas flow, *Subsonic flow, *Electric arcs, Velocity, Electric currents, Density, Pressure, Energy, Measurement, Dissociation, Excitation, Ionization, Thermal radiation, Instrumentation, Bolometers, Oscillographs.

Lifshits, I. M. and Tsikovich, F. I.
ON THE KINETICS OF DISRUPTING SUPERCONDUCTIVITY BY A VARIABLE FIELD. 14 Feb 63 [20]p. 6 refs. FTD-TT-62-1716; AD-400 533.
Order from OTS or SLA $1.60 63-19169

Unedited rough draft trans. of Kharkov U. Ucheni Zapysky (USSR) 1955, v. 64, p. 45-57.

DESCRIPTORS: *Superconductivity, Dynamics, Phase transitions, Electromagnetic fields, Thermodynamics, Equations of motion, Partial differential equations.

Shein, V. B.
TO CALCUTATE CONVECTIVE PROCESSES OF WATER EVAPORATION FROM VERTICAL CYLINDRICAL CONTAINERS (Ob Uchete Konvektivnykh Protsessov Ispareniya Vody iz Vertikal'nykh Tsilindricheskikh Polostei). Apr 63 [5]p. 5 refs. RTS-2207.
Order from OTS or SLA $1.10 63-15963

Trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 1, p. 52-54.

DESCRIPTORS: Convection, *Water, *Evaporation, Water vapor, *Cylindrical bodies, *Containers, Pipes, Mathematical analysis, Tests.

The results are given of research into the evaporation of water from vertical and slightly inclined tubes of circular cross-section, caused by processes of gravitational concentration. It is shown that the nature of the evaporation of water depends to a large extent on the radius of the tube, and also on the distance between the mouth of the bore and the water level inside it. (Author)

Acoustics

Khimunin, A. S.
ULTRASONIC FLOW METERS. [1963] 12p.
Order from ATS $14.85 ATS-30Q68R

Trans. of mono. Teploenerg[eticheskie] i Khimikotekhnol[ogicheskie] Pribory i Regulyatory, Moscow, 1961, chap. 8, p. 101-114 (ed. by P. P. Kremlevskii).

DESCRIPTORS: Flowmeters, Ultrasonic radiation, Sound

Shuleikin, V. V.
ACOUSTICS OF THE SEA. PT. VII. (Akustika Morya) tr. by M. Slessers. 1962 [112]p. 21 refs.
HO Trans-466.
Order from OTS or SLA $9.60 63-15927

Trans. of mono. Fizika Morya (Physics of the Sea) Moscow, 1953, p. 639-726.

DESCRIPTORS: *Acoustics, *Oceans, *Marine geophysics, *Underwater sound, *Underwater sound equipment, Design, Measurement, Analysis, Equations, Propagation, Sound, Ultrasonic properties, Hydrophones, Piezoelectric gages, Magnetostriction, Echo ranging.

The propagation of sound waves in the air and water is analyzed, taking into consideration the physical and chemical characteristics of the water medium which affect the diffusion, reverberation and velocity of sound. Also infrasonic waves caused by the air movement over water are discussed. The instruments used in tests such as piezoelectric echo-sounder, magnetostrictive echo-sounder, etc. are described, pointing out their operation, measurements and their accuracy. (Author)

Electricity and Magnetism

Alekseevskii, N. E. and Mikhailov, N. N.
SUPERCONDUCTING SOLENOIDS CONTAINING Nb_3Sn FOR STRONG MAGNETIC FIELDS. [1962] 4p. 6 refs.
Order from OTS or SLA $1.10 62-14735

Trans. of #Zh[urnal] Eksper[imental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1961, v. 41, no. 6, p. 1809-[1810]. Another trans. is available from OTS or SLA $1.10 as 62-18712 [1962] 4p.

DESCRIPTORS: *Solenoids, *Superconductivity, Coils, *Niobium compounds, *Tin alloys, Magnetic fields, Design, Intermetallic compounds, Magnetic properties.

The properties of superconducting solenoids prepared from Nb_3Sn are presented. The dependence of critical current on external magnetic field is considered for this superconducting compound. (Author)

Andreev, S. I., Vanyukov, M. P., and Serebryakov, A.
APPLICATION OF FERRITES FOR GENERATION OF POWERFUL HIGH VOLTAGE PULSES ON NONO SECOND DURATION (Primenenie Ferritov dlya Generirovaniya Moshchnykh Impul'sov Vysokogo Napryazheniya Nanosekundnoi Dlitel'nosti) tr. by H. H. 7 Jan 63, 6p. 4 refs. I-7036.
Order from OTS or SLA $1.10 63-15405

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1962 [v. 7] no. 3, p. 89-92.

DESCRIPTORS: *Ferrites, *Pulse generators, Electric potential, Circuits, *Electromagnetic pulses, *Electric discharges, Oscillator circuits.

When a heavy current spark discharge from a conductor with ferrite torus was introduced into a circuit, it was found that high voltage pulses of nano-second duration with a power of $\sim 10^6$ watts was developed on that portion of the conductor containing the ferrite. Cited herein are data pertaining to the effect of discharge parameters on the amplitude, duration, and the repetition rate of such pulses. (Author)

Deller, Rudolf.
METAL TRANSFLUXORS. [1962] 8p. (figs. omitted) 5 refs.
Order from SLA $1.10 63-10682

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: Metals, *Saturable reactors, *Coupling circuits, Hysteresis, Magnetic properties, *Magnetic alloys, Design, Ferrites.

On hand of the practical example of the three-hole-transfluxor, a number of viewpoints to be considered when choosing the shape and material for metal transfluxors are outlined. The first measuring results in connection with transfluxors out of 5000 Z and consisting of alternately stratified U-shaped parts and piled or stapled frame structures are reported and dealt with. (Author)

Kolomiitseva, G. I., Novysh, V. V., and Finger, D.L. MEASUREMENTS OF THE EARTH'S MAGNETIC FIELD ON A MOVING SHIP. [1962] [3]p. 10 refs. [DSIR] NLL M. 8993.
Order from OTS or SLA $1.10 63-15231

Trans. of Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 1, p. 177-179.

DESCRIPTORS: Measurement, *Earth, *Magnetic fields, Ships (Nonmilitary), Motion, Shipborne, Magnetometers, Corrections.

A method is described for measuring the earth's magnetic field, carried out in the Baltic by magnetometers located immediately on an iron ship. To exclude the effect of the natural magnetisation of the vessel, appropriate corrections were introduced in accordance with the data of sporadic observations by a magnetometer, the transducer of which was towed in a gondola. The errors in the results of the measurements from an iron vessel were estimated by means of comparison with the results of synchronous measurements in a gondola towed outside the magnetic field of the ship. They were found to be 120γ (Z) and 80γ (T). (Author)

Molotilov, B. V., Dovgalevskii, Ya. M., and Povolotskii, E. G.
CARBON IN MAGNETICALLY SOFT IRON-ALUMINUM ALLOYS [AND] DETERIORATION OF THE MAGNETIC PROPERTIES OF MAGNICO ALLOYS IN DULL FRACTURE. 11 Mar 63 [19]p. 24 refs.
FTD-TT-63-2; AD-299 654.
Order from OTS or SLA $1.60 63-19899

Unedited rough draft trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1962, no. 6, p. 2-5, 14-17.

DESCRIPTORS: *Iron alloys, *Aluminum alloys, *Carbon alloys, *Magnetic properties, Microstructure, Ferromagnetism, Heat treatment, Hardening, Stresses, Magnesium alloys, Nickel alloys, Cobalt alloys.

Electronics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIOPHYSICS SERIES, 1962, VOL. 5, NO. 6. 21 May 63, 457p. JPRS: 19316.
Order from OTS $6.00 63-21875

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1962, v. 5, no. 6, p. 1051-1250.

DESCRIPTORS: *Electronics, Cosmic rays, Extraterrestrial radio waves, Rock (Geology), Electrical properties, Moon, Plasma physics, Dielectrics, Particles, Motion, Electromagnetic fields, Magnetohydrodynamics, Resonance, Single crystals, Shock waves, Antenna radiation patterns, Electrons, Equations of motion, Oscillation, Generators, Oscillators, Differential equations, Linear programming, Semiconductors.

Contents:
Spectrum of nonthermal cosmic radio emission and the nature of the electronic component of primary cosmic rays, by G. G. Getmantsev
Certain electric characteristics of earth rocks and their comparison with the characteristics of the surface layer of the moon, by V. D. Krotikov
Radiation of nonequilibrium plasma, by F. V. Bunkin
Energy losses of a charged particle in a dielectric slab, by V. E. Pafomov
Passage of fast particles through a magneto-active plasma, by V. N. Tsytovich
Fluctuations of electromagnetic field in non-equilibrium plasma, by L. S. Bogiankevich
Contribution to the theory of fluctuation in magnetohydrodynamics, by Yu. A. Kurochkin
Contribution to the theory of ferromagnetic and antiferromagnetic resonance, by V. N. Genkin, and V. M. Fain
Energy levels and relative intensities of nuclear spin resonance lines in single crystals, by N. E. Ainbinder and V. S. Grechishkin
Electromagnetic shock waves in nonlinear line with lumped parameters, by Yu. K. Bogatyrev
Antenna arrays with distances between radiators increasing with arithmetic progression, by Yu. M. Zhidko
Interactions between electrons and the field of a standing TEM wave at large transit angles, by V. G. Eremin and M. A. Miller
Refinement of averaged equation of motion of charged particles in the field of a standing electromagnetic wave, by A. G. Litvak and others.
Characteristics of plane electron gap in the presence of external force field, by S. B. Mochenev
Experimental investigation of fluctuation phenomena in the establishment of oscillations in a generator with two stable states, by S. A. Akhmanov and V. P. Komolov
Some operating modes of a single-tube self-oscillator with delay, by P. A. Perepelyatnik
Effect of two harmonic voltages on a self-oscillator, by V. N. Detinko
Generation of periodic motion from an equilibrium on a discontinuity surface, by Yu. T. Neimark, and S. D. Kinyapin
Investigation of the stability of the solution of a quasi stationary system of linear differential equation with almost periodic coefficients, by K. G. Valeev
Effect of Mass of the oscillating ground on vibration ramming, by V. A. Gorokhov
Determination of optinal variable parameter of a linear system with finite memory, by M. F. Romanov
Contribution to theory of the external photoeffect from semiconductors with large photoelectron work punctions, by Z. I. Uritskii

Two-position regulator with correcting sign transmitter, by A. I. Cherepanov
Letter to the editor, by A. G. Kislyakov
Information: abstracts of selected articles from Geomagnetism and Aeronomy, 1962, v. 2, no. 4.

Dushin, L. A., Kononenko, V. I. and others.
MICROWAVE PLASMA DIAGNOSTICS, tr. by J. Stuart. Rept. from the Conference on Plasma Physics and the Problem of Controlled Thermonuclear Reactions (no. 1) Kiev, 1962. Nov 62 [13]p. 5 refs. AERE Trans. 925.
Order from OTS or SLA $1.60 63-19284

Trans. from mono. Plasma Physics and Problems of Controlled Nuclear Fusion, Kiev, 1962.

DESCRIPTORS: *Plasma physics, Ionized gases, Diagnosis, Measuring devices (Electrical and electronic), *Microwave equipment, Interferometers, Electric fields, Magnetic fields, Microwaves, Propagation, Oscillographs, Thermonuclear reactions, Control.

A description of some plasma diagnostic methods based on the case existing when the electric field of the wave is parallel to the external magnetic field and the latter does not affect the character of microwave propagation.

Kontorovich, V. M.
INTERACTION BETWEEN SMALL PERTURBATIONS WITH DISCONTINUITIES AND THE STABILITY OF SHOCK WAVES IN MAGNETOHYDRODYNAMICS. 14 May 63 [12]p. 5 refs.
Order from OTS or SLA $1.60 63-19660

Unedited rough draft trans. of mono. Voprosy Magnitnoi Gidrodinamiki [i Dinamiki] Plazmy, Riga, 1959, p. 117-125.
Another trans. is available from OTS $3.50 in AEC-tr-4509, Sep 61, 289p.

DESCRIPTORS: *Shock waves, Stability, *Magnetohydrodynamics, Refraction, Reflection, Perturbation theory, Doppler effect, Plasma physics.

Morgulis, N. D.
EFFECTS AT THE CATHODE OF A PLASMA DIODE AS A MODEL OF MAGNETOGAS DYNAMIC ENERGY CONVERSION. 27 May 63, 6p. 11 refs. JPRS: 19408.
Order from OTS $0.50 63-21917

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1962 [v. 7] no. 10, p. 1131-1134.

DESCRIPTORS: *Energy conversion, Heat, Electricity, *Magnetohydrodynamics, *Plasma physics, *Diodes, Cathodes, *Thermionic emission, Models (Simulation).

Zimin, E. P. and Popov, V. A.
DETERMINATION OF THE OPTIMUM COMPOSITION OF GASEOUS MIXTURES CONTAINING AN EASILY IONIZABLE ADDITIVE. 8 Feb 63 [12]p. 4 refs. FTD-TT-62-1893; AD-299 633.
Order from OTS $0.50 63-11625

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 3, p. 10-14.

DESCRIPTORS: *Magnetohydrodynamics, *Gas ionization, *Additives, *Ionic current, Electrical conductance, *Alkali metals, Vapors, *Helium group gases, Mixtures, Temperature, Pressure.

It is shown that by diluting the vapor of easily ionizable metals with practically non-ionizable gases it is possible to create mixtures whose conductivity at a given temperature and pressure is higher than that of the vapor of the pure metal. The conductivity of such a mixture is not very much greater than that of the pure metal, but the saving in metal can be quite considerable. The use of such a dilution is limited with respect to temperature and pressure.

Molecular Physics and Spectroscopy

Galanin, M. D.
RESONANCE TRANSFER OF THE EXCITATION ENERGY IN LUMINESCENT SOLUTIONS (Rezonansnyi Perenos Energii Vozbuzhdeniya v Lyuminestsiruyushchikh Rastvorakh) tr. by Lydia Venters. Mar 62, 64p. 60 refs.
Order from OTS or SLA $6.60 AEC-tr-5067

Trans. of Akademiya Nauk SSSR, Fizicheskii Institut, Trudy, 1960, v. 12, p. 3-53.

DESCRIPTORS: *Molecules, *Excitation, *Luminescence, Quantum mechanics, Resonance absorption, *Absorption spectrum, Energy, Solutions, Optics.

Kalinin, D. K., Marzuvanov, V. L., and Fain, E. E.
SPECTRUM ANALYSIS OF SOME ELEMENTS IN A CARBON DIOXIDE ATMOSPHERE (Spektral'nyi Analiz Nekotorykh Elementov v Atmosfere Uglekislogo Gaza). [1962] [16]p. 5 refs.
Order from OTS or SLA $1.60 63-19037

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1957 [v. 13] no. 12, p. 61-60.

DESCRIPTORS: *Carbon dioxide, Atmosphere, Electric arcs, Excitation, *Spectrographic analysis, *Controlled atmospheres.

The work investigates the characteristics of arc discharge in a carbon dioxide atmosphere. The possibility of conducting spectrum analyses of ores and minerals in a CO_2 atmosphere is also considered. (Author)

Optics

THE SCATTERING OF LIGHT IN THE ATMOSPHERE AND THE CALCULATION OF TOTAL ILLUMINATION (Rasseyanie Sveta v Atmosfere i Raschet Summarnoi Osveshchennosti) tr. by G. L. Cairns. Mar 61 [20]p. Library Communication no. 1058; DSIR NLL M. 4771.
Order from OTS or SLA $1.60 62-25378

Trans. of mono. Spravochnaya Kniga po Svetotekhnike, II Osvetitel'nye Ustanovki (Handbook on Lighting, II, Lighting Fittings) Moscow, 1958, chap. 4, sect. 19.

DESCRIPTORS: *Illumination, *Scattering, *Light, *Atmosphere, *Sky brightness, Earth, Surfaces, Cloud cover, Sun, Moon.

Gorbacheva, N. A.
LIGHT CHARACTERISTICS OF THE PHOSPHOR $Cd_2P_2O_7$-Mn, Pb, tr. by Sergey Shewchuck. Aug 62 [9]p. 4 refs.
Order from OTS or SLA $1.10 UCRL Trans-858 (L)

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1951, v. 21 [no. 2] p. 305-309.

DESCRIPTORS: *Phosphors, *Light, *Excitation, Cadmium, Niobium, Phosphorus, Oxygen, Manganese, Lead, *Phosphorescent materials.

Shishlovskii, A. A.
LUMINESCENCE ANALYSIS (Lyuminestsentnye Analiz) tr. by M. 7 Jan 63, 46p. 17 refs. I-5081.
Order from OTS or SLA $4.60 63-15901

Trans. of mono. Prikladnaya Fizicheskaya Optika (Applied Physical Optics) Moscow, 1961, pt. 3, chap. 11, p. 527-584.

DESCRIPTORS: *Luminescence, Excitation, Absorption spectrum, Quenching (Inhibition), Intensity, Analysis, *Phosphorescence, *Fluorescence, Optical instruments, *Spectroscopy, *Light.

Wolter, H.
SCHLIEREN METHOD, PHASE CONTRAST METHOD, AND LIGHT INTERSECTION METHOD. [1963] [163]p. 142 refs.
Order from SLA $12.00 63-14669

Trans. of Handbuch der Physik (West Germany) 1956, v. 24, Fundamentals of Optics, p. 555-645.

DESCRIPTORS: *Optics, *Optical properties, *Optical equipment, Light transmission, Deflection, Diffraction, Refractive index.

Contents:
Geometric-optical study of the Schlieren method
Quantitative relation between light deflections and their physical causes
Diffraction unsharpness in Schlieren methods and their decrease by marking of the minimum beam
Diffraction at the object and its effect on Schlieren-and phase contrast images of simple object forms
Types of phase contrast apparatus. Variable and colored phase contrast
Light intersection method
Comparison of Schlieren- and phase contrast methods with the projection interference methods

Solid State Physics

Amelinckx, S. and others.
GROWTH OF UO_2 SINGLE CRYSTALS. Quarterly rept. 3, 1 Jan-31 Mar 62, on Contract 055-61-7 RDB. [1962] 4p.
Order from OTS or SLA $1.10 EURAEC-297

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n. d.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Single crystals, Growth, *Crystallization, Sublimation

The purpose of this study is the further development of a method for preparing UO_2 single crystals by sublimation. As the method is well established a great number of runs has been made without change of the furnace arrangement. Single crystals up to 5 g have been grown. A completely new equipment is under construction, containing a stainless steel vessel, a 500 ℓ/s pumping device, and a semi-automatic power-supply providing programmed pre-heating, stabilized temperature control and after heating arrangement. (Author)

Amelinckx, S. and others.
PHYSICAL PROPERTIES OF UO_2 SINGLE CRYSTALS. Quarterly rept. 2, 1 Jan-31 Mar 62, on Contract 063-61-10 RDB. [1963] 31p. 6 refs.
Order from OTS or SLA $3.60 EURAEC-302

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n. d.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Single crystals, *Physical properties, Radiation effects, Crystal lattices, Thermal conductivity, Electrical conductance, Semiconductors, Absorption spectra

A satisfactory method for measuring accurately the density of uranium oxide single crystals was developed and tested. It makes use of the compound float and water is the immersion liquid. The method for measuring lattice parameters is now at the point where an accuracy of 3×10^{-4} Å is achieved. The effort concerning the measurement of thermal conductivity was concentrated on developing an accurate standard gas thermometer for the low temperature work. The first systematic measurements of the electrical conductivity have been performed on seven specimens which were nominally stoichiometric. The measurements were restricted to the low temperature range. The study of electrical conductivity mechanisms in oxide semiconductors was continued. An effort was made to reinterpret some data on titanium oxide for which complete

measurements exist in the literature. A possible relation with the situation in uranium oxide is discussed. A theoretical analysis is made of the influence of oxygen pressure on the electrical conductivity in uranium oxide. It was possible to prepare thin single crystal foils of UO_2 suitable for electron transmission microscopy. Precipitates have been found in the single crystals dating from an early fabrication period. The optical absorption spectrum of uranium oxide single crystals was measured. The absorption edge is located around 2.4 - 2.2 eV. This absorption corresponds to band gap transitions. (See also EURAEC-266)

Antonov-Romanovskii, V. V.
ON RECOMBINATION OF PHOSPHORESCENCE, tr. by Sergey Shewchuck. Aug 62, 17p. 12 refs.
Order from OTS or SLA $1.60 UCRL Trans-852(L)

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1946, v. 10 [no. 5/6] p. 477-487.

DESCRIPTORS: Phosphorescent materials, *Phosphorescence, *Recombination reactions.

Berg, L. G.
MINERAL SYNTHESIS BY DIFFUSION (Sintez Mineralov Metodom Diffuzii) tr. by Zanis Stuberovskis. June 62, 6p. E-T-R-R-62-32; AD-284 837.
Order from OTS or SLA $1.10 62-33216

Trans. of Priroda (USSR) 1957 [v. 46] no. 7, p. 95-97.

DESCRIPTORS: *Minerals, *Synthesis (Chemistry), *Diffusion, Solutions, Ions, Crystal growth, Sedimentary rock, Strontium compounds, Sulfates, Lead compounds, Chromates, Copper compounds, Carbonates, Calcite.

Feldtkeller, Ernst.
KINETIC ENERGIES OF THE WALL IN ANISOTROPIC NICKEL-IRON LAYERS. [1963] [21]p. 20 refs.
Order from SLA $2.60 63-14462

Trans. of German language unpublished manuscript [1962?].

DESCRIPTORS: *Iron compounds, *Nickel compounds, Anisotropy, Walls, Reaction kinetics, Exchange reactions, Energy *Ferromagnetism

80/20 - Nickel-iron layers of 300 to 800 Å thickness were annealed to various bases at temperatures between 20° and 400°C. For all layers, there was a uniform relationship between layer thickness, anisotropic field strength and kinetic field strengths of the wall for re-magnetization in the easy and heavy directions. Theoretical considerations were made with respect to the effect of thickness, magnetization, exchange constants and anisotropic inhomogeneities upon wall energies. From measurements and theoretical conjectures we conclude: The contribution of thickness inhomogeneities to kinetic field strength of the wall is independent of the type of base, as well as the temperature of application. It is almost independent of thickness for re-magnetization in the easy direction, whereas for re-magnetization in the heavy direction it becomes smaller with increasing thickness. The remaining contribution, depending upon conditions of preparation is the same for both field directions and is based upon inhomogeneities of anisotropic constants as well as anisotropic direction. (Author)

Geitschenko, V. V. and Smirnov, A. A.
THEORIE DES ALLIAGES ORDONNES DU TYPE Fe_3Al [Theory of the Ordering of Alloys of the Fe_3Al Type] tr. by Mme. T. Merette. 24 Mar 62 [6]p. 3 refs. CEA Trans. no. R 1638.
Order from OTS or SLA $1.10 63-15500

Trans. in French of Metalloved. Obrabot. Metal., S.S.S.R., 1961, 13, 44-46 [sic].

DESCRIPTORS: *Iron alloys, *Aluminum alloys, Crystal structure, Transformations, Theory.

Kekelidze, N. P.
CONSEQUENCES OF NUCLEAR TRANSFORMATIONS IN GERMANIUM MONOCRYSTALS IRRADIATED WITH SLOW NEUTRONS (Posledstviya Yadernykh Preobrazovanii v Monokristallakh Germaniya, Obluchennykh Medlennymi Neitronami). [1962] [9]p. 10 refs.
Order from OTS or SLA $1.10 AEC-tr-5147

Trans. of mono. Symposium on the Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 1 [Vienna] 1961, p. 557-563.

DESCRIPTORS: *Germanium, *Single crystals, Transformations, Thermal neutrons, Semiconductor devices, Impurities.

Liebisch, Th. and Vortiesch, Erh.
CRYSTALLIZATION PROCESSES IN TERNARY SYSTEMS FROM CHLORIDES OF UNIVALENT AND DIVALENT METALS, II. [1962] 23p.
Order from K-H- $23.00 K-H-8529-d

Trans. of [Akademie der Wissenschaften, Berlin. Klasse Mathematik, Physik und Technik]. Sitz[ungsberichte] (Germany) 1920, v. 24, p. 426-442.

DESCRIPTORS: *Crystallization, *Chlorides, *Metallic compounds

Molchanov, V. A. and Tel'kovskii, V. G.
ANGULAR FEATURES OF THE DISINTEGRATION OF METALS BY ION BEAMS. 15 Apr 63 [16]p. 28 refs. FTD-TT-63-326.
Order from OTS or SLA $1.60 63-19422

Unedited rough draft trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya [1962] v. 26 [no. 11] p. 1359-1365.

DESCRIPTORS: *Plasma physics, *Ion beams, Particle accelerator targets, *Metal crystals, Decomposition, Anisotropy, *Sputtering, Mass spectroscopy.

Topics include: Apparatus for obtaining ion beams; sputtering coefficient of polycrystalline surfaces; angular features of sputtering in polycrystals; anisotropy of the sputtering coefficient of single crystals; angular distribution of sputtered particles

angular features of sputtering in single crystals and radiation theories.

Nekrashevich, I. G. and Bakuto, I. A.
THE PROBLEM OF DISRUPTIVE DISCHARGE OF DIELECTRICS. 2 Apr 63 [10]p. 3 refs. FTD-TT-63-5.
Order from OTS or SLA $1.10 63-19405

Unedited rough draft trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1962, v. 6, no. 1, p. 26-30.

DESCRIPTORS: *Dielectrics, Degradation, Phase transitions, Ions, Electric currents, Production, *Electric discharges.

Raithel, K.
THE FORMING OF POINT CONTACTS ON GERMANIUM. [1963] [37]p. (figs. omitted).
Order from SLA $3.60 63-14407

Trans. of Süddeutsche Apparate-Fabrik G.m.b.H., Nuremburg (West Germany). Technical Rept. 402, 8 Oct 52.

DESCRIPTORS: *Semiconductors, *Germanium, Impurities, Antimony alloys, Tin alloys, *Electric connectors, *Platinum alloys, *Iridium alloys, Electrical properties, Resistance (Electrical), Electric currents, Distribution, Statistical analysis.

The static characteristic curves of formed Pt-Ir point contacts on n-germanium are systematically investigated. The relationship between low- and high-resistance properties, and of initial voltage to conductivity of the material, is illustrated by extensive statistical measurements. Interference effects due to polycrystalline structure, various surface treatments and possible reaction of the melt with the crucible material are discussed. (Author)

Voigt, F.
THE INFLUENCE OF MAGNETIC ANNEALING ON THE TEMPERATURE DEPENDENCE OF THE INITIAL PERMEABILITY OF NICKEL ZINC FERRITES CONTAINING COBALTS. [1963] 7p. 4 refs.
Order from SLA $1.10 63-14751

Trans. of Physica Status Solidi (Germany) 1962, v. 2, no. 2, p. K27-K30.

DESCRIPTORS: *Cobalt, *Ferrites, *Zinc, *Nickel, Permeability, Temperature, Annealing, Magnetic fields, Anisotropy

Thermodynamics

Barlybaev, Kh. A. and Bukhman, S. V.
A STUDY OF HEAT TRANSFER IN A CIRCULAR CHANNEL. 30 Jan 63 [17]p. 2 refs. FTD-TT-62-1642.
Order from OTS or SLA $1.60 63-19498

Unedited rough draft trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Izvestiya. Seriya Energeticheskaya, 1961, no. 1(19) p. 21-29.

DESCRIPTORS: Heat exchangers, *Heat transfer, Fluid flow, Fluid mechanics, Velocity, Geometry, Laminar boundary layer.

It is shown that the geometry of a channel has the main effect on the temperature field and heat transfer, just as on the flow itself. The asymmetry of the temperature profile, particularly the location of the temperature maximum, is a function of the ratio of the radii. The same sort of dependence is characteristic of the Nusselt number in stabilized heat transfer, which in general is determined by two parameters: the ratio of the radii and the ratio of the heat flows through walls of the channel. The determination of heat transfer separately for the inner and outer walls of a circular channel shows that for the inner wall it is more intensive, especially at high ratios of the radii of the outer and inner pipes of the circular channel. The calculations (for the case of constancy of heat flows through the walls of the channel) show that the location of the temperature maximum is slightly dependent upon the velocity profile. Regarding the effect of the latter on heat transfer, it apparently has the same character as for heat transfer in the two limiting cases (in a circular pipe and in a plane channel). (Author)

Ermolenko, V. D.
A NEW METHOD FOR DETERMINING MOISTURE DIFFUSION COEFFICIENTS IN WET MATERIALS. Apr 63, 2p. 5 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 10, p. 70-[72].

DESCRIPTORS: Chemical engineering, *Moisture, *Diffusion, *Heat transfer, Mass transfer, Reaction kinetics, Dehydration, Determination.

Gel'perin, N. I. and Ainshtein, V. G.
THERMAL CALCULATION OF A PNEUMATIC CONVEYOR IN A FLUIDIZED BED. Apr 63, 5p. 6 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 10 [p. 753-756].

DESCRIPTORS: Chemical engineering, *Conveyors, *Pneumatic devices, *Fluidized solids, Heat transfer, Pyrites.

Gel'perin, N. I., Ainshtein, V. G., and Aronovich, F. D.
THE EFFECT OF SCREENING ON HEAT TRANSFER IN A FLUIDIZED BED. Apr 63, 6p. 8 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskoe Mashinostroenie (USSR) 1962 [v. 5] no. 5, p. 13ff.

DESCRIPTORS: Chemical engineering, *Heat transfer, Shielding, *Fluidized solids, Heat exchangers, Coils, Pipes.

Ievlev, V. N., Gol'denberg, S. A. and others.
EFFECT OF DIFFUSION FACTORS ON FLAME STABILITY [AND] HEAT EXCHANGE IN THE HORIZONTAL SURFACES OF HEAT INSULATING STRUCTURES SLOTTED WITH METAL IN DEEP COOLING SYSTEMS. 5 Mar 63 [18]p. 9 refs.
FTD-TT-62-1804.
Order from OTS or SLA $1.60 63-19500

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 7, p. 18-22, 28-33.

DESCRIPTORS: *Flames, *Stabilization systems, *Diffusion, Fuels, Gasoline, Air, Mixtures, Combustion, Thermal insulation, Metal, Structures, Surfaces, *Heat transfer, Cryogenics, Cooling, *Refrigeration systems.
This article considers the causes for the deviation from the universal relationship of experimental values of critical velocities of flame blow-off from small stabilizers [1, 2]. The experimental investigation was carried out with a gasoline-air mixture using conical and cylindrical stabilizers. (Iyevlev and Gol'denberg) Heat exchange in the horizontal surfaces of heat insulating structures slotted with metallic structures in systems of deep cooling is experimentally investigated. The values of coefficient of heat exchange obtained are compared with its calculated values derived by various means. (Krylov and Strakhovich)

Kitover, K. A.
THE PROBLEM OF CALCULATING CIRCULAR TUBULAR GRIDS IN HEAT EXCHANGERS. Apr 63, 6p. 4 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskoe Mashinostroenie (USSR) 1962 [v. 5] no. 6, p. 14ff.

DESCRIPTORS: Chemical engineering, *Heat exchangers, Cylindrical bodies, Pipes, Design.

Kling, G.
THE EFFECT OF GAS PRESSURE ON THE THERMAL CONDUCTIVITY OF INSULATING MATERIALS [May 63].
Order from BGIRA BGIRA-554

Trans. of Allg[emeine] Wärmetechnik (West Germany) 1952, v. 3, no. 8/9, p. 167-174.

DESCRIPTORS: Gases, *Pressure, *Thermal conductivity, *Thermal insulation, Heat transfer.

Kruithof, A. M. and Padmos, A. A.
PHOTOELASTIC DETERMINATION OF THERMAL EXPANSION IN GLASSES AND METALS, PT. I. [May 63].
Order from BGIRA BGIRA-557

Trans. of Sprechsaal (West Germany) 1962, v. 95, no. 17, p. 464-467.

DESCRIPTORS: *Photoelasticity, Determination, *Thermal expansion, *Glass, *Metals.

Kruithof, A. M. and Padmos, A. A.
PHOTOELASTIC DETERMINATION OF THERMAL EXPANSION IN GLASSES AND METALS. PT. II. [May 63].
Order from BGIRA BGIRA-558

Trans. of Sprechsaal (West Germany) 1962, v. 95, no. 18, p. 484-487.

DESCRIPTORS: *Photoelasticity, Determination, *Thermal expansion, *Glass, *Metals.

(See also BGIRA-557)

Kruithof, A. M. and Padmos, A. A.
PHOTOELASTIC DETERMINATION OF THERMAL EXPANSION IN GLASSES AND METALS, PT. III. [May 63].
Order from BGIRA BGIRA-559

Trans. of Sprechsaal (West Germany) 1962, v. 95, no. 19, p. 518-520.

DESCRIPTORS: *Photoelasticity, Determination, *Thermal expansion, *Glass, *Metals.

(See also BGIRA-558)

Kruithof, A. M. and Padmos, A. A.
PHOTOELASTIC DETERMINATION OF THERMAL EXPANSION IN GLASSES AND METALS, PT. IV. [May 63].
Order from BGIRA BGIRA-560

Trans. of Sprechsaal (West Germany) 1962, v. 95, no. 24, p. 691-694.

DESCRIPTORS: *Photoelasticity, Determination, *Thermal expansion, *Glass, *Metals.

(See also BGIRA-559)

Kruithof, A. M. and Padmos, A. A.
PHOTOELASTIC DETERMINATION OF THERMAL EXPANSION IN GLASSES AND METALS, PT. V. [May 63].
Order from BGIRA BGIRA-561

Trans. of Sprechsaal (West Germany) 1963, v. 96, no. 2, p. 36-39.

DESCRIPTORS: *Photoelasticity, Determination, *Thermal expansion, *Glass, *Metals.

(See also BGIRA-560)

Lykov, A. V.
HEAT AND MASS TRANSFER IN EVAPORATION. Apr 63, 8p. 15 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 11, p. 12-[24].
Another trans. is available from OTS or SLA $3.60 in 63-19336, FTD-TT-63-158, 21 Mar 63 [39]p.

DESCRIPTORS: *Heat transfer, *Mass transfer, *Evaporation, Porous materials, Dehydration, Cooling, Boundary layer, Chemical engineering.

Rothe, Rudolf.
THERMOSTAT FOR LOW TEMPERATURES AND ITS APPLICATION IN THE COMPARISON OF THERMO-ELEMENTS [PT. 1] [1963] 15p. 8 refs.
Order from SLA $1.60 63-14654

Trans. of Zeitschrift für Instrumentenkunde (Germany) 1902, v. 22, p. 14-21.

DESCRIPTORS: *Thermostats, Liquids, Temperature, Measurement, Design, Operation, Thermometers, Cryogenics.

Shabanov, S. I.
AN ANALYTICAL INVESTIGATION OF THE HEATING OF A GRANULAR MATERIAL MIXED WITH A SOLID HEAT-TRANSFER MEDIUM. Apr 63, 4p. 5 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Akad[emiya] Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 9, p. 20ff.

DESCRIPTORS: Chemical engineering, *Heat transfer, Mass transfer, Fluidized solids, Heat exchangers, Numerical analysis.

Slobodkin, L. S.
HEAT AND MASS TRANSFER BETWEEN A GAS AND A SINGLE GRANULE. Apr 63, 4p. 13 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 10, p. 26-[31].

DESCRIPTORS: Chemical engineering, *Heat transfer, *Mass transfer, *Gases, Particles, Thermodynamics, Dehydration, Heat.

Smol'skii, B. M. and Novikov, P. A.
THE MECHANISM OF HEAT AND MASS TRANSFER DURING SUBLIMATION UNDER VACUUM. Apr 63, 4p. 6 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962 [v. 5] no. 11, p. 41ff.

DESCRIPTORS: Chemical engineering, *Heat transfer, *Mass transfer, *Sublimation, Napthalenes, Hydrocarbons, Pressure, Diffusion.

Solntsev, M. Ya., Bobe, L. S., and Korotaeva, G. K.
DETERMINATION OF THE COEFFICIENTS OF HEAT TRANSFER FROM A GAS TO A BED OF FREE-FLOWING MATERIALS. Apr 63, 5p. 14 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskoe Mashinostroenie (USSR) 1962 [v. 5] no. 6, p. 8ff.

DESCRIPTORS: Chemical engineering, *Heat transfer, Determination, Separation, Cooling, *Gases, Viscosity, Thermal conductivity, Hydrodynamics, Silicon compounds, Dioxides, Carbon, Basalt.

Tsoi, P. V.
ANALYTICAL SOLUTIONS OF A SYSTEM OF HEAT AND MASS EXCHANGE EQUATIONS FOR A SEMI-LIMITED MEDIUM UNDER VARIOUS BOUNDARY CONTITIONS. 16 May 63 [14]p. AID rept. T-63-65.
Order from OTS or SLA $1.60 63-19446

Trans. of paper presented at the Conference of Heat and Mass [Transfer] held in Minsk [5-10 June] 61.

DESCRIPTORS: *Heat transfer, *Mass transfer, Thermal conductivity, *Integral transforms, Partial differential equations, Thermodynamics, *Mathematical analysis.

The analytical theory of heat and mass transfer of a bound substance for a semilimited medium under various boundary conditions of the first and second order is presented.

Vakhrushev, I. A., Botnikov, Ya. A., and Zenchenkov, N. G.
HEAT TRANSFER FROM A FLUIDIZED BED OF HOT COKE TO THE SURFACE OF HORIZONTAL TUBES. Apr 63, 4p.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 11 [p. 787-789].
Another trans. is available from ATS $8.00 as ATS-92Q66R [1962] 6p.

DESCRIPTORS: *Heat transfer, *Fluidized solids, Temperature, Velocity, *Coke, Pipes, Chemical engineering.

Vetlutskii, V. N. and Onufriev, A. T.
RADIATION COOLING OF A GAS FLOWING IN A FLAT CHANNEL. Apr 63, 6p. 13 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Zh[urnal] Prikład[noi] Mekh[aniki] i Tekh[nicheskoi] Fiz[iki] (USSR) 1962, no. 6, p. 29ff.

DESCRIPTORS: Chemical engineering, *Cooling, *Gas flow, Gases, Temperature, Emissivity, Neutron transport theory, Couette flow, Numerical analysis.

Wollast, R. and Jottrand, R.
THERMODYNAMIC EQUILIBRIUM OF HYDROCARBONS IN FISCHER-TROPSCH SYNTHESIS EXPERIMENTAL RESULTS. [1963] 18p. 3 refs.
Order from SLA $1.60 63-14314

Trans. of Rev[ue de l'] Inst[itut] Français de Pétrole [et Annales des Combustibles Liquides] 1962, v. 17, p. 379-394.

DESCRIPTORS: *Thermodynamics, *Chemical equilibrium, *Hydrocarbons, Synthesis (Chemical), *Chromatographic analysis, Gases.

Zurakowski, S.
HEAT-TRANSFER EFFICIENCY IN GAS-SOLID SUSPENSION SYSTEMS. Apr 63, 8p. 8 refs.
Order from ICE in v. 3, no. 2, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1962 [v. 18(41)] no. 9, p. 527ff.

DESCRIPTORS: *Heat transfer, *Heat exchangers, Cyclones, Gravity, Hydrodynamics, Measurement.

Wave Propagation

Belugin, V. F.
MONTHLY FORECASTS OF THE F_2 LAYER'S MAXIMUM USABLE FREQUENCY. 17 May 63, 21p. 7 refs. JPRS: 19245.
Order from OTS $0.75 63-21842

Trans. of [Akademiya Nauk SSSR]. Institut Zemnogo Magnetizma, Ionsfery i Rasprostraneniya Radiovoln. Trudy, 1961, no. 19(29) p. 140-150.

DESCRIPTORS: *Ionosphere, *Radio waves, *Ionospheric propagation, Radio interference, Mathematical prediction, Frequency, Radiofrequency.

We present two forms of presentation of the MUF forecasts of the F2 layer. We also present the method for the preparation of forecasts in the form that we found preferable. (Author)

Poeverlein, Hermann.
PATHS OF RADIO WAVES IN THE IONOSPHERE, REPT. 1. [1963] [17]p. 13 refs.
Order from SLA $1.60 63-14439

Trans. from unidentified mono. from the conference papers of the Bavarian Academy of Sciences, 1948, Section for Mathematics and Natural Sciences.

DESCRIPTORS: *Radio waves, *Ionosphere, Trajectories, Terrestrial magnetism, Refractive index, Graphic analysis, *Ionospheric propagation, Electromagnetic wave reflections.

A method is first explained by means of which raypaths could be constructed. The main part of the report gives typical examples of ray paths, something about the behavior and peculiarities of paths and about related questions (among others about the dead zone and the reciprocity law for electrical waves). In an example the polarization of the waves and the direction of the wavenorms is represented clearly for the individual points on a ray's path. (Author)

Sobolev, S. L.
THE WAVE EQUATION FOR A NON-UNIFORM MEDIUM (Volnovoe Uravnenie dlya Neodnorodnoi Sredy) tr. by Sergey Shewchuck. Mar 62, 83p. (foreign text included).
Order from OTS or SLA $8.10 UCRL Trans-796(L)

Trans. of Akademiya Nauk SSSR. Seismologicheskii Institut. Trudy, 1930, v. 6, p. 1-57.

DESCRIPTORS: *Wave transmission, Propagation, Theory, Mathematical analysis.

Solov'ev, E. G.
ELECTROMAGNETIC WAVE PROPAGATION BETWEEN TWO CIRCULAR CYLINDRICAL SURFACES IN THE PRESENCE OF LONGITUDINAL DIAPHRAGMS SITUATED PERIODICALLY. [1961] 5p. 2 refs. MDF S-116.
Order from OTS or SLA $1.10 62-23030

Trans. of [Radiotekhnika (USSR) 1956, v. 11, no. 1, p. 57-60].

DESCRIPTORS: *Wave transmission, *Electromagnetic waves, Propagation, *Cylindrical bodies, Diaphragms (Mechanics), Electric fields, Vector analysis, Equations.

Electromagnetic wave propagation is analyzed between two circular cylindrical surfaces in the r, φ plane when longitudinal diaphragms situated periodically along φ are present. The problem is solved by the method of 'sewing' the fields on the boundary of the two regions. The longitudinal electric field between the diaphragms is approximated according to the traveling wave law. A dispersion equation for the propagation constant is obtained. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY [SELECTED] TRANSLATIONS NO. 37. 31 May 63, 17p. JPRS: 19523.
Order from OTS $0.50 63-21970

Trans. of Priroda (Bulgaria) 1962, v. 11, no. 6, p. 108-112; and from Jen Min Jih Pao (Chinese People's Republic) 1963, 25 Mar, p. 2.

DESCRIPTORS: *Scientific research, *China, *Microorganisms, *Scientific personnel, Attitudes, *Viruses, Infections, Nucleic acids.

Contents:
Microbiology in China, and in particular, virological research at the Institute for Microbiology in Wuhan, by Kao Shang-yin
The exuberant atmosphere of the science hall, by Lu Hsin-ch'u.

CONVERSATION WITH A MACHINE. 4 Feb 63 [3]p. FTD-TT-63-76; AD-298 182.
Order from OTS or SLA $1.10 63-19086

Unedited rough draft trans. from Kazakhstanskaya Pravda (USSR) 1962, 16 Nov, p. 4.

DESCRIPTORS: *Cybernetics, *Artificial intelligence, Speech.

DEVELOPMENT OF RESEARCH USING COMPUTERS IN UKRAINIAN SSR [AND] PROSPECTIVE PROBLEMS FOR THE SCIENTIFIC SUPPORT INSTITUTE, UKRAINIAN SSR. 22 May 63, 6p. JPRS: 19325.
Order from OTS $0.50 63-21880

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1963, no. 2, p. 271-272.

DESCRIPTORS: *Scientific research, Research program administration, *Computers, Applied mathematics.

Gast, Theodor.
AN ELECTRICAL MICROBALANCE FOR THE AUTOMATIC RECORDING OF VERY SMALL CHANGES IN WEIGHT. [1963] 21p. 4 refs.
Order from SLA $2.60 63-14753

Trans. of Feinwerktechnik (West Germany) 1949, v. 53, no. 6, p. 167-172.

DESCRIPTORS: *Electrical equipment, * Microbalances, *Recording systems, Automation, Design, Operation, Circuits, *Weight, Quantitative analysis, Dielectric properties

The article describes an electrical microbalance which can be used to record deviations of a few micrograms from a basic weight of up to one gram. The principle of operation, the mechanical construction, and the electrical circuitry are described, and examples of applications are given. In conclusion, the prospects for further development are briefly discussed. (Author)

Gavrilov, M. A.
SYMPOSIUM ON THE THEORY OF RELAY DEVICES AND FINITE AUTOMATA. 29 May 63, 5p. JPRS: 19483.
Order from OTS $0.50 63-21951

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 4, p. 85-88.

DESCRIPTORS: *Conferences, *Cybernetics, *Relays, Automatic, Control systems, Theory, Probability, Reliability, Special functions, Computer logic, Synthesis.

Mel'chuk, I. A. and Tsveig, G. S., eds.
FOREIGN WORKS ON MACHINE TRANSLATION: SOVIET BIBLIOGRAPHY 1960-61. Foreign Developments in Machine Translation and Information Processing no. 122. 20 May 63, 126p. 313 refs. JPRS: 19293
Order from OTS $2.75 63-21870

Trans. of mono. Bibliografiya Zarubezhnykh Rabot po Mashinnomu Perevodu (1960-61 gg) Moscow, 1962, 80p.

DESCRIPTORS: *Bibliographies, *Machine translation, Language.

Milcu, Stefan.
PROGRESS OF RUMANIAN SCIENCE IN THE YEARS OF THE PEOPLE'S RULE. 21 May 63, 7p. JPRS: 19309.
Order from OTS $0.50 63-21873

Trans. of Stiinta si Tehnica (Rumania) 1963, v. 15, no. 3, p. 3-5.

DESCRIPTORS: *Scientific research, Research program administration, *Rumania.

Novik, I. V.
CYBERNETICS AND THE INTERRELATIONSHIP OF THE SCIENCES. 23 May 63, 11p. JPRS: 19373.
Order from OTS $0.50 63-21903

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 4, p. 54-61.

DESCRIPTORS: *Cybernetics, *Science, Synthesis, Philosophy, Applied mathematics.

An analysis of some philosophical problems of cybernetics, connected, mainly, with the development of formalized-functional methods of investigations presented.

Ressin, A. I.
USE OF LOGARITHMIC AMPLITUDE CHARACTERISTICS FOR CALCULATING THE ENTROPY OF OUTPUT PROCESSES OF AUTOMATIC CONTROL SYSTEMS. 17 May 63, 12p. 5 refs. JPRS: 19242.
Order from OTS $0.50 63-21839

Trans. of Avtomatika i Vychislitel'naya Tekhnika (Lativian SSR) 1962, no. 2, p. 29-38.

DESCRIPTORS: Automatic, *Control systems, Statistical processes, Entropy, *Information theory, Integrals, Logarithms, Linear systems, Statistical functions, Input-output devices, Data transmission systems.

Satpaev, K.
INSTITUTE, LABORATORY, AND PRODUCTION. 10 Jan 63 [7]p. JPRS: 17080.
Order from OTS or SLA $1.10 63-19545

Trans. from an unidentified issue of Izvestiya (USSR)

DESCRIPTORS: *Industrial research, *Scientific organizations, Laboratories, Industrial production, Economics.

An account of the establishment of new scientific institutions and research facilities in the immediate vicinity of production centers.

Semkov, B. F.
THE PHILOSOPHICAL QUESTIONS OF CYBERNETICS. 8 May 63 [11]p. FTD-TT-63-368.
Order from OTS or SLA $1.60 63-19652

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 9, p. 128-131.

DESCRIPTORS: *Cybernetics, *Philosophy.

Summaries are presented of papers presented at the theoretical conference of philosophical seminars of scientific insitutes of the USSR Academy of Sciences which was devoted to the philosophical questions of cybernetics.

Tron', A. P.
CERTAIN PROBLEMS IN THE APPLICATION OF THE THEORY OF GAMES TO NAVAL STUDIES. 23 May 63, 14p. 2 refs. JPRS: 19374.
Order from OTS $0.50 63-21904

Trans. of Morskoi Sbornik (USSR) 1963, v. 46, no. 1, p. 23-30.

DESCRIPTORS: *Armed forces research, *Naval operations, *Decision making, Numerical methods and procedures, *Game theory.

A presentation is given of general considerations and potentialities in the application of the theory of games in military research.

Communication Theory

COMMUNICATIONS NETWORKS, PT. I: REVIEW OF SOVIET LITERATURE. Rept. no. 2 on AID Work Assignment no. 33. 25 Jan 63 [44]p. 49 refs. AID rept. P-63-15; AD-297 359.
Order from OTS or SLA $4.60 63-15722

Abstracts of articles reviewing Soviet developments in communication networks, based on source materials made available at AID.

DESCRIPTORS: Communication equipment, *Communication systems, Literature, *Abstracts.

Harmuth, Henning.
TRANSMISSION OF SIGNALS BY INTEGRATION OF CODED SIGNALS. [1963] [17]p.
Order from SLA $1.60 63-14491

Trans. of Archiv der Elektrischen Übertragung (West Germany) 1954, v. 8, p. 132-136.

DESCRIPTORS: *Signals, *Transmission, Coding, *Integration, Pulse modulation, Probability, Signal-to-noise ratio, Telegraph signals, Integrators, *Communication theory.

With respect to susceptibility to noise and bandwidth, pulse code modulation is the most favorable type of modulation among those in use today. For the same transmission capacity it requires, however, still eight times the transmitting power of an ideal system. The reason is that, broadly speaking, the transmitted signals must include, in addition to the intelligence proper as contained in the encoded pulse group, information as to the position of the individual pulses so as to enable the receiving equipment to decode the incoming signal. The need for such additional information can be eliminated if decoding is not effected by scanning for pulse or no pulse, but by integration over the entire pulse group. (Author)

SOCIAL SCIENCES

APPLICATION OF CYBERNETICS TO CRIMINOLOGY AND JURISPRUDENCE. 22 May 63, 55p. JPRS:19322.
Order from OTS $1.50 63-21878

Trans. of Staat und Recht (East Germany) 1963 [v. 12] no. 4, p. 593-636.

DESCRIPTORS: *Cybernetics, *Criminology, Mathematical logic, *Decision making, Social sciences, *Machines, Communication theory.

Contents:
The possibility of applying cybernetic methods to jurisprudence, by Viktor Knapp
Cybernetic methods and means applied to criminology, by Armin Forker and Karlheinz Kannegiesser.

DECREE ON THE SPECILIZATION OF SCIENTIFIC WORKERS. 15 Apr 63 [8]p. JPRS: 18702.
Order from OTS $0.50 63-21576

Trans. from Durzhaven Vestnik (Bulgaria) 1963, no. 23, 22 Mar.

DESCRIPTORS: *Scientific personnel, Education, Scientific research.

ORDER CONCERNING COMMISSION FOR USE OF UNIVERSE FOR PEACEFUL PURPOSES NO. 36. 29 Apr 63, 2p. JPRS: 18954.
Order from OTS $0.50 63-21705

Trans. from Sluzbeni List, Belgrade (Yugoslavia) 1963 [v. 19] no. 12, p. 163.

DESCRIPTORS: *Space flight, Scientific organizations, *Political science.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 40. 9 May 63, 45p. JPRS: 19120.
Order from OTS $1.25 63-21792

Trans. of Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 12, p. 34-38; Narodnoe Khozyaistvo Kazakhstana (USSR) 1963 [v. 21] no. 1, p. 9-16; 35-38; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 12, p. 71-72; 1963, no. 2, p. 77-83; and from Zarya Vostoka (USSR) 1963, 1 Feb, p. 3; Sovetskaya Belorussiya (USSR) 1963, 16 Jan, p. 4.

DESCRIPTORS: *Industrial production, *Economics, Analysis, Budgets, Standardization, Machines, Metal-forming presses, Scientific organizations, Transportation, Warehouses, Industries.

Contents:
Economic analysis in the Khersonskii Sovnarkhoz, by P. Zaglubotskii
Production targets for the fifth year of the Seven-year plan in Kazakhstan, by B. Bratchenko
Unsolved problems in the development of the Pavlodarsko-Ekibastuzskii industrial complex (Kazakhstan) by V. Vakhlamov
The Zestafonskaya industrial zone (Georgia)
Belorussian industrial development, by N. Kaptsevich and A. Bakin
Production unification, normalization and standardization in machine and instrument building enterprises of Moscow oblast Sovnarkhoz, by I. V. Gellert
Voronezhskii Sovnarkhoz state plane fulfillment, by A. F. Goncharik
Metal processing by pressure at Moscow City sovnarkhoz enterprises, by V. E. Yanin
Work of the section of the Technical-Economic Council of the Rostovskii sovnarkhoz, by L. S. Plyush
Technical Conference on Problems of Intra-Plant Transportation and Warehouses, by S. I. Kul'pin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 45. 11 June 63, 31p. JPRS: 19640.
Order from OTS $1.00 63-31025

Trans. of Novye Tovary (USSR) 1963, no. 4, p. 7; and from Lesnaya Promyshlennost' (USSR) 1963, 23 Apr, p. 3-4; Kommunist Tadzhikstana (USSR) 1963, 3 Apr p. 3; Sovetskaya Estoniya (USSR) 1963, 17 Mar, p. 2; Komsomol'skaya Znamya (USSR) 1963, 16 Apr, p. 1, 3; Ekonomicheskaya Gazeta (USSR) 1963, no. 17 [90] p. 46; no. 18[91] p. 46; no. 20[93] p. 48.

DESCRIPTORS: *Industrial production, *Economics, Cellulose, *Paper industry, Construction, Forestry, *Wood, *Automation, Scientific personnel.

Contents:
Weak points in the cellulose-paper industry of the RSFSR, by I. E. Voronov
Construction problems, in the RSFSR, cellulose-paper industry
A conference on the problems and shortcomings of the lumber industry in the RSFSR
Problems of technological progress and automation in Tadzhikistan, by N. Rakhimov
Production advances in the Estonian sovnarkhoz, by A. Vendelin
Consumer goods shortages in the former Rostovskii sovnarkhoz, by L. Korenblat
Komsomol production suggestions in the Ukraine
Komsomol production successes in the Ukraine
Positions open for the UFA Aviation Institute imeni S. Ordzhonidze
New home appliances in the Ukraine.

Polushkin, V. A.
THE PAST TEN YEARS AT VINITI (ALL-UNION INSTITUTE OF SCIENTIFIC AND TECHNICAL INFORMATION). 29 May 63, 3p. JPRS: 19482.
Order from OTS $0.50 63-21950

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 3, p. 127-128.

DESCRIPTORS: *Scientific organizations, *Scientific information centers, Documentation, *Information theory.

Veinik, A.
TRAINING THE MIND FOR SCIENCE AND CREATIVITY: BETTER REGULARITY THAN CHANCE. 5 June 63, 8p. JPRS: 19560.
Order from OTS $0.50 63-21981

Trans. of Tekhnika Moledezhi (USSR) 1963 [v. 31] no. 3, p. 10-13.

DESCRIPTORS: *Training, Education, Science, *Reasoning, Brain, *Memory.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6215
Yegorov, Pavel Timofeyvich and others
CIVIL DEFENSE (Grazhdanskaya oborona). Moscow, Gosizdat "Vysshaya shkola," 1962. 363p. 40,000 copies printed.

BR-SOV/6216
Glukhanov, Nikolay Parmenovich, and Valentin Nikolayevich Bogdanov
HGH-FREQUENCY WELDING OF METALS (Svarka metallov pri vysokochastotnom nagreve). Moscow, Mashgiz, 1962. 189p. 7000 copies printed.

BR-SOV/6217
Kragel'skiy, Igor' Viktorovich
FRICTION AND WEAR (Treniye i iznos). Moscow, Mashgiz, 1962. 382p. Errata slip inserted. 11,000 copies printed.

BR-SOV/6218
Bodin, Constantin
INFRARED RADIATION IN MILITARY APPLICATIONS (Radiatiile infrarosii in tehnica militara). [Bucharest] Editura militara [1962] 175p. 534 copies printed.

BR-SOV/6219
Kulikov, Konstantin
MOVEMENT OF THE EARTH'S POLES (Dvizheniye polyusov Zemli) 2d ed., rev. and enl., Moscow, Izd-vo AN SSSR, 1962. 84p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya).

BR-Z/6221
Majer, Vladimir, Docent
PRINCIPLES OF NUCLEAR CHEMISTRY (Zaklady jaderne chemie). Prague, SNTL, 1961. 607p. Errata slip inserted. 2500 copies printed.

BR-SOV/6222
Borisov, Konstantin Nikolayevich
FUNDAMENTALS OF AIRCRAFT ELECTRIC DRIVES. PT. 1: UNCONTROLLED DRIVE). Moscow, Oborongiz, 1962. 203p. Errata slip inserted. 6150 copies printed.

BR-SOV/6223
Yudin, S. B., and others.
CENTRIFUGAL CASTING (Tsentrobezhnoye lit'ye). Moscow, Mashgiz, 1962. 360p. (Series: Inzhenernyye monografii po liteynomu proizvodstvu) 4500 copies printed.

BR-SOV/6224
Polshkov, Mikhail Konstantinovich
BASIC PROBLEMS IN EQUIPMENT FOR SEISMIC EXPLORATION; TRANSITIONAL PROCESSES AND RESOVLING POWER (Osnovnyye voprosy seysmorazvedochnoy apparatury; ustanavlivayushchiyesya protsessy, razreshayushchaya sposobnost'). Moscow, Gostoptekhizdat, 1962. 335p. 3000 copies printed.

BR-SOV/6225
Malinin, Nikolay Nikolayevich
STRENGTH OF TURBINE ENGINES (Prochnost' turbomashin). Moscow, Mashgiz, 1962. 291p. Errata slip inserted. 8000 copies printed.

BR-SOV/6226
Chestnov, Anatoliy Vasil'yevich, Docent
PILOTING AIRCRAFT IN FLIGHT (Letnaya ekspluatatsiya samoleta). Moscow, Voyenizdat M-va obor. SSR, 1962. 247p. 8000 copies printed.

BR-SOV/6227
Balagurov, Vladimir Aleksandrovich and others.
DESIGNING ELECTRICAL APPARATUS FOR THE ELECTRICAL EQUIPMENT OF AIRCRAFT (Proyektirovaniye elektricheskikh apparatov aviatsionnogo elektrooborudovaniya). Moscow, Oborongiz, 1962. 515p. 8000 copies printed.

BR-SOV/6228
Agafonov, Vasiliy Prokhorovich, and Aleksey Valer'yanovich Sakovich
MILITARY COMMUNICATIONS (Voyennaya svyaz'). Moscow, Voyenizdat M-va obor. SSSR, 1962. 232p. Errata slip inserted. 8000 copies printed.

BR-SOV/6229
Alent'yev, Aleksandr Aleksandrovich and others.
HYDROPHOBIC ORGANOSILICONS (Kremniyorganicheskiye gidrofobizatory). Kiyev, Gostekhizdat USSR, 1962. 109p. 600 copies printed.

BR-SOV/6231
Dikovich, Igor' Leonidovich
DYNAMICS OF ELASTOPLASTIC BEAMS (Dinamika uprugo-plasticheskikh balok). Leningrad, Sudpromgiz, 1962. 291p. 2200 copies printed.

TRANSLATIONS IN PROCESS

GLASSY STATES, VOL. 3 NO. 1. (CATALYZED CRYSTALLIZATION OF GLASS).
Mono. Stekloobraznoe sostoyanie, Tom 3, Vyp. 1 (Katalizinrovannaya kristallizatsiya stekla) Moscow, 1963, 160p.
To be published by CB after 3d quarter 64.

GROWTH OF CRYSTALS, VOL. 4
Mono. Rost kristallov, Tom 4, Moscow, 1963, 240p.
To be published by CB after 2d quarter 64.

MOLECULAR GENERATORS
Mono. Molekulyarnye Generatory, Moscow, 1963, 320p.
To be published by CB after 2d quarter 64.

PLANT INDICATORS OF SOIL, ROCKS, AND GROUND WATER.
Mono. Rastitel'nye Indikatory Pochb Gornykh Porod i Podzemnykh Vod, Moscow, 1963, 320p.
To be published by CB after 3d quarter 64.

PLUTONIUM 239: DISTRIBUTION, BIOLOGICAL ACTION AND ACCELERATION OF EXCRETION.
Mono. Plutonii-239. Raspredelenie, Biologicheskoe Deistvie, Uskorenie Vyvedeniya, Moscow, 1962, 168p.

[SOME PROBLEMS IN MECHANICS (COLLECTED PAPERS)]
Nekotorye Voprosy Mekhaniki (Sbornik Statei) Moscow, 1962, p. 5-35, 107-126.

Aleksandrov, N. N.
CRANIAL AND CEREBRAL INJURIES IN ACUTE RADIATION SICKNESS
Mono. Raneniya Cherepa i Golovnogo Mozga pri Ostroi Luchevoi Bolezni, Leningrad, 1962, 176p.

Bal'shin, M. Yu.
THEORETICAL CALCULATION OF SURFACE TENSION AND OF CERTAIN OTHER CHARACTERISTICS OF SOLIDS AND LIQUIDS.
A[kademiya] N[auk URSR, Kiev]. In[stytut] Metallokeram[iky] i Spets[ial'nykh] Splaviv. Byulleten', 1959, no. 4, p. 5-37.

Belov, N. V.
FERROMAGNETIC, ANTIFERROMAGNETIC AND FERROELECTRIC GROUPS.
Mono. Ferromagnitiye, Antiferromagnitnye i Segnetoelektricheskie Gruppy, Moscow, 1962, 96 pages.

Denisov, V. G. and Rostislav, N. L.
FLIGHT-NAVIGATION INSTRUMENTS; THE PILOTING OF A PLANE BY INSTRUMENTS.
Mono. [Pilotazhno-Navigatsionnye Pribory; o Pilotirovanii Samoleta po Proboram] Moscow, 1962, 108p.

Devyatova, V. A., ed.
HANDBOOK ON THE HIGH ALTITUDE VERTICAL-HORIZONTAL SOUNDING OF THE ATMOSPHERE IN THE AIRCRAFT IL-28.
Mono. Rukovodstvo po Vysotnomu Vertikal'no-Gorizontal'nomu Zondirovaniyu Atmosfery na Samolete IL-28, Moscow, 1962, 149p.

Efimov, E. A. and I. G. Erusalimchik
ELECTROCHEMISTRY OF GERMANIUM AND SILICON.
Mono. Elektrokhimiya Germaniya i Kremniya, Moscow-Leningrad, 1963, 112p.
To be published by CB after 2d quarter 64.

Elpiner, I. E.
ULTRASOUND: ITS PHYSICAL, CHEMICAL AND BIOLOGICAL EFFECTS.
Mono. Ultraazvuk: Fiziko-Khimicheskoe i Biologicheskoe Deistvie, Moscow, 1962, 30 pages.
To be published by CB after 3d quarter 64.

Frank-Kammenentski, D. A.
LECTURES ON PLASMA PHYSICS.
Mono. Lektsii po fizike plasmy, Moscow, 1963, 240p.
To be published by CB after 3d quarter 64.

Gorenshtein, I. A., and others
INERTIAL NAVIGATION.
Mono. Sovetskoe Radio, n. p., 1962, 248p.

Kodochigov, P. N.
ON PRACTICAL PROBLEMS OF IONIZING RADIATION (DOSIMETRY).
Mono. O Prakticheskikh Voprosakh Dozimetrii Ioniziruyushchikh Izluchenii, Moscow, n.d., 135p.

Kozlov, V. M. and Turovskii, V. D.
BERYLLIUM: TOXICOLOGY, DISEASE CLINIC, SANITATION OF LABOR.
Mono. Berillii, Toksikologiya, Klinika Porazhenii Gigiena Truda, Moscow, 1962, 119p.

Kravchenko, I. V.
METEOROLOGY AND THE PILOT.
Mono. Letchiky o Meteorologii, Moscow, 1962, 318p.

Kurshakova, N. A., ed.
A CASE OF ACUTE RADIATION SICKNESS IN MAN.
Mono. Sluchai Ostroi Luchevoi Bolezni u Cheloveka [Moscow] 1962, 151p.

Leontovicha, M. A.
PROBLEMS IN PLASMA PHYSICS, PARTS 1-3.
Mono, Voprosy Teorii Plasmy, Moscow, 1963, 3 v. (810p.).
To be published by CB after 1964.

Liozner, L. D.
RESTITUTION OF LOST ORGANS.
Mono. Vosstanovlenie Utrachennykh Organov, Moscow, 1962, 143p. (Nauchno-Populyarnaya Seriya).

Livanov, M. N.
SOME PROBLEMS IN THE EFFECT OF IONIZING RADIATION UPON THE NERVOUS SYSTEM.
Mono. Nekotorye Problemy Deistviya Ionizruyushchei Radiatsii na Nervnuyu Sistemu, Moscow, 196p.

Manets, F. I.
PROTECTION FROM RADIOACTIVE AND POISONOUS SUBSTANCES. Mono. Zashchita ot Radioaktivnykh i Otravlyayushchikh Veshchestv, Moscow, 1962, 88 pages.

Mednikov, E. P.
THE ACOUSTICAL COAGULATION OF AEROSOLS.
Mono. Akusticheskaya Koagulyatsiya Aerozoleii, Moscow, 1963, 256p.
To be published by CB after 3d quarter 64.

Nosov, M. V.
CALCULATION OF THE BASIC DIMENSIONS OF SINGLE-STAGE CENTRIPETAL TURBINE.
Mono. Raschet Osnovnykh Razmerov Odnostupenchatoi Tsentrostremital;noi Turbiny, Moscow, 1961, 84 pages.

Osipov, K. A.
SOME ACTIVATED PROCESSES IN SOLID METALS AND ALLOYS.
Mono. Nekotorye Aktivirovannye Protsessy v Tverdykh Metallakh i Splavakh, Moscow, 1963, 136p.
To be published by CB after 1st quarter 64.

Pavlova, I. P.
PROBLEM OF PHYSIOLOGY AND PATHOLOGY OF NERVOUS SYSTEM.
Trudy: Voprosy Fiziologii i Patologii Nervnoi Sistemy, Moscow-Leningrad, 1959, v. 8, 631p. [sic].

Rabkin, I. G.
FLIGHT SAFETY.
Mono. [Bezopasnost' Poletov] Moscow, 1962, 132p.

Sedov, L. I., Sokolovskii, V. V. and others, eds.
ALL UNION CONGRESS OF THEORETICAL AND APPLIED MECHANICS, 27 JAN - 3 FEB 1960 (SUMMARY REPORTS).
Mono. Vsesoyuznyi S"ezd po Teoreticheskoi i Prikladnoi Mekhanike, 27 Yanvarya- 3 Fevralya 1960 G. Trudy, Moscow, 1962, 467p.

Topchiev, A. V.
RADIOLYSIS OF HYDROCARBONS.
Mono. Radioliz Uglevodorodov, Nekotorye Fiziko-Khimicheskie Problemy, Moscow, 1962, 208p.

Vainberg, M. Sh. and Dorngauz, A. N.
PRACTICAL WORK IN DOSIMETRIC INSTRUMENTS FOR X-RAY AND ATOMIC RADIATION.
Mono. Praktikum po Dozimetricheskim Proboram dlya Rentgenovskogo i Yadernykh Izluchenii, Moscow, n.d., 183p.

Vernov, S. N. and G. A. -Skuridin.
RADIATION BELTS OF THE EARTH.
Mono. Radiatsionnye Poyasa Zemli, Moscow, 1962, 128p.
To be published by CB after 1st quarter 64.

Vorontsov, D. S.
GENERAL ELECTROPHYSIOLOGY.
Mono. Obshchaya Elektrofiziologiya, Moscow, 1961, 487p.

PERIODICALS TRANSLATED COVER-TO-COVER

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